ArcelorMittal USA

May 30, 2018

Mr. Brandon Pursel
U.S. Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Mail Code LU-9J
Chicago, Illinois 60604-3507

Subject: **Data Sufficiency Evaluation**
ArcelorMittal Indiana Harbor Long Carbon
East Chicago, IN

Dear Mr. Pursel:

ArcelorMittal USA LLC (ArcelorMittal) is pleased to submit this Resource Conservation and Recovery Act (RCRA) Facility Investigation Data Sufficiency Evaluation for the Indiana Harbor Long Carbon Facility (IHLC), a sub-parcel of the larger ArcelorMittal Indiana Harbor East (IHE) facility located in East Chicago Indiana.

As we discussed in our 12 October 2017 meeting, the IHLC facility shut-down operations in 2015 and the IHLC property is being marketed for sale/redevelopment as an industrial use. To expedite the marketability and sale of the IHLC property, ArcelorMittal is separating the on-site RCRA Corrective Action (CA) obligations from those of the ongoing IHE facility-wide RCRA CA. Further, ArcelorMittal intends to perform an accelerated RCRA CA on the IHLC property utilizing the U.S. Environmental Protection Agency's (EPA) recently published RCRA Facilities Investigation Remedy Selection Track (FIRST) – A Toolbox for Corrective Action (May 2016). The RCRA FIRST toolbox was developed using Lean techniques to improve the efficiency of the RCRA CA process.

This RCRA Facility Investigation (RFI) Data Sufficiency Evaluation, outlined in RCRA First Tool 4, has been prepared to demonstrate project Data Quality Objectives (DQOs) have been satisfied for the IHLC property, and the data are sufficient to proceed to the next step in the RFI process.

Regards,
Cary Mathias

Enclosures
c: Mark Pomfrey, Haley & Aldrich, Inc.

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HALEY ALDRICH

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REPORT ON

DATA SUFFICIENCY EVALUATION
INDIANA HARBOR LONG CARBON FACILITY
EAST CHICAGO, INDIANA

by Haley & Aldrich, Inc.
Cleveland, Ohio

for ArcelorMittal USA LLC
Cleveland, Ohio

File No. 129719
May 2018

Table of Contents

Table of Contents

List of Tables

List of Figures

1. Introduction

Haley & Aldrich, Inc. (Haley & Aldrich), on behalf of ArcelorMittal USA LLC (ArcelorMittal), has prepared this Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Data Sufficiency Evaluation for the Indiana Harbor Long Carbon (IHLC) property (herein referred to as the "IHLC property"), a sub-parcel of the larger ArcelorMittal Indiana Harbor East (IHE) facility, located in East Chicago, Indiana (Figure 1, Project Locus).

1.1 SITE DESCRIPTION

The IHLC property includes former IHE Plant 4 (Solid Waste Management Unit [SWMA] 2) and is located at 3300 Dickey Road, Lake County, East Chicago, Indiana. The IHLC property is located in the southern "on-shore" portion of the IHE property, approximately 4,000 feet south of the original Lake Michigan shoreline (Figure 1). The IHLC property includes approximately 92 acres of the approximately 2,400-acre IHE property and comprises Lake County Parcel Nos. 45-03-21-201-001.000-024 (88.26 acres) and 45-03-16-451-001.000-024 (4.056 acres). A Site Plan showing general historical operations layout and features is included as Figure 2.

1.2 PROJECT OBJECTIVE

On 8 March 1993, ArcelorMittal (formerly Mittal Steel USA Inc., ISPAT Inland Inc. [ISPAT], and Inland Steel Company [Inland]) entered into a *Multimedia Consent Decree (Civil Action H90-0328)* with the United States Environmental Protection Agency (U.S. EPA) to address in part, RCRA Corrective Action (CA) requirements at ArcelorMittal's IHE facility (EPA ID. No. IND 005 159 199). Per the Consent Decree, ArcelorMittal is responsible for performing the RCRA CA Program as set forth in Section VII of the Consent Decree and associated Attachments (I through V).

As described in our 12 October 2017 meeting, the IHLC facility shut-down operations in 2015. The IHLC property was transferred to ArcelorMittal's corporate Real Estate and Environmental Group and is being marketed for sale/redevelopment. To assist in and to expedite the marketability and sale of the IHLC property, ArcelorMittal is separating the on-site RCRA CA obligations from those of the ongoing IHE facility-wide RCRA CA mentioned above. Further, ArcelorMittal intends to perform an accelerated RCRA CA on the IHLC property utilizing the U.S. EPA's recently published RCRA Facilities Investigation Remedy Selection Track (FIRST) – A Toolbox for Corrective Action (May 2016). The RCRA FIRST toolbox was developed using Lean techniques to improve the efficiency of the RCRA CA process.

This RFI Data Sufficiency Evaluation, outlined in RCRA First Tool 4, has been prepared to demonstrate project Data Quality Objectives (DQOs) have been satisfied for the IHLC property, and the data are sufficient to proceed to the next step in the RFI process.

1.3 FUTURE SITE REDEVELOPMENT

ArcelorMittal plans to sell the property for industrial re-use, which will propitiously create jobs to support the local economy. Further, redevelopment of the now vacant property will be aesthetically positive for the surrounding community. ArcelorMittal has begun marketing the IHLC property and has had positive discussions with potential buyers looking to redevelop the property and facility.

1.4 INDIANA HARBOR CANAL – REMEDIATION

The surface waters and sediments of the Indiana Harbor Ship Canal (IHSC), located adjacent west of the IHLC property, have been impacted by numerous industrial and municipal discharges located along the Calumet River. As part of Supplemental Environmental Projects (SEPs) established by a Corrective Action Consent Decree (2005), the U.S. Army Corps of Engineers will dredge the IHSC with funds supplied by potentially responsible parties (PRPs). Proposed dredging of PCB-impacted sediments within the IHSC will reduce the contaminants that are washing into Lake Michigan and improve the efficiency of deep draft commercial navigation. Over the next few years, the entire federal channel will be dredged to congressionally authorized navigation depths, including the removal of sediments in IHLC adjacent berthing and docking areas. The current project plan includes the operation and maintenance of a treatment facility on the IHE property, in the area of former Plant 3. The processed sediments will then be transported to a Landfill in Michigan. At no time during the project will impacted sediments be treated at or stored on the IHLC property, nor will processed sediment be disposed of on the IHLC property.

2. Site History and Historical Operations

The following sections provide information on the history of the IHLC property and summarize historic Plant 4 operations.

2.1 SUMMARY OF SITE HISTORY

The manufacturing facility that later became known as Plant 4 and IHLC was developed in the early 1940s (during World War II) as the American Steel Foundries Cast Armor Plant by American Steel Foundries and the United States Defense Plant Corporation to produce cast armor for use in military battle tanks. Processes conducted at the Cast Armor Plant included steel making in six small open-hearth furnaces, foundry/casting operations, steel heat-treating, and various steel-cleaning and finishing operations. Cast armor production ceased in 1945, resumed briefly during the Korean War (1951-1952), and was terminated in 1953. Plant 4 was idle between 1946-1951 and 1953-1962. Because the plant was initially constructed as a cast armor plant, there are few sub-grade structures (e.g., pits, trenches, sumps) present that are typical of steel mills.

Inland purchased the IHLC property in 1962 and utilized the existing structures for storage. In 1965, Plant 4 (as the Cast Armor Plant was renamed after its purchase by Inland) was retrofitted with the Welded Structural Shapes Mill (Shapes Mill) to weld beams from strips of steel plates. The Shapes Mill ceased operations in 1969, and the 12-inch Bar Mill (Bar Mill), began operations in the same year after significant modifications to the existing IHLC property buildings. The Electric Arc Furnace (EAF) Shop and billet caster began operations at Plant 4 in 1970 and included steel-making and finishing, steel roll refurbishing, and waste water treatment (historical operations and processes are discussed further in the following section). In 1998, ISPAT assumed these operations, which continued until the plant was idled by ArcelorMittal in 2015. ArcelorMittal was formed from the acquisition of Arcelor by Mittal Steel in 2006. Mittal Steel in turn was formed from the merger of ISPAT and LNM Holdings in 2004.

2.2 HISTORICAL OPERATIONS

Based on a review of available information, including information provided within the *Phase I RCRA Facility Investigation (Screening) Report – SWMA 2* ([Phase I RFI – SWMA 2]; Law Engineering and Environmental Services [Law], 1999), the following operations and processes were conducted at Plant 4:

- Steel making;
- Steel finishing;
- Steel roll refurbishing; and
- Waste water treatment.

The following sections identify and generally describe the operations which comprised each of these historical operations/processes. The approximate location of each of the operations is shown on Figure 2.

2.2.1 Steel Making

Steel making operations at Plant 4 were performed at the No. 1 EAF/Billet Caster. The EAF steel-making process utilized a 120-ton EAF to produce steel from scrap steel. Scrap steel and other metallurgical

materials were charged into the furnace and heated with an electric arc generated by graphite electrodes. The EAF produced steel exclusively from steel scrap, adding alloys and fluxes as necessary to meet specifications.

The chemical reactions that take place in the EAF are similar to those in other steel-making processes. When the carbon, phosphorus, and sulfur concentrations are decreased, and the temperature is raised to the desired level, the molten steel is tapped from the furnace into a ladle. Ferromanganese, ferrosilicon, and other agents are added to the steel at the Ladle Metallurgy Station to deoxidize the steel and obtain the desired composition.

Following treatment at the Ladle Metallurgy Station, the molten steel was conveyed via ladle to the continuous billet caster to be molded and cast into billets. The scale from the billet caster scale pit was transported to the Sinter Plant for recycling. Residual scale pit sludge was initially transported to the northern end of the IHE facility for use as fill material until approximately 1993, and when disposal practices changed, the material was transported off-property for disposal. The billets were transported to the Bar Mill and the 2A/21-inch Mill Complex for rolling into bar product.

Furnace baghouse dust was collected for off-site recycling. The ladle metallurgical baghouse dust was collected in bags and recycled back into the furnace. Occasionally, due to operational constraints, the ladle metallurgical baghouse dust was sent off-site for appropriate disposal. Historically, from 1970 until approximately 1978, EAF dusts were transported to the northern end of the IHE facility for use as fill material. Beginning in approximately 1978, and continuing until 1984, the EAF dust was stockpiled at the northern end of the IHE facility (SWMA 9), was later disposed of off-property. Beginning in 1984, the baghouse dusts were collected and sent off-site for recycling and/or disposal. From 1970 until 1993, the steel-making slag from the EAF and Ladle Metallurgy Station was transported to the northern end of the IHE facility for either reclamation, fill material, or off-property sale. Based on the available information, no wastes associated with the steel-making process were disposed of on the IHLC property.

2.2.2 Steel Finishing

Steel rolling is the process of shaping steel by processing ingots, slabs, blooms, or billets through sets of rollers to reduce the thickness of the steel and form the steel to a desired shape or size. Hot rolling enables the steel to be more easily shaped or formed and in turn reduces the amount of energy required for the rolling process. Steel finishing operations were conducted in the Bar Mill.

The Bar Mill operated from 1969 until the plant was idled in 2015, producing bar stock from steel billets supplied by the Billet Mill in Plant 2 and the EAF billet caster. The billets were initially ground to remove surface imperfections. The waste grinder swarf generated during this process was transported to the Sinter Plant for recycling. The billets were then reheated in the reheat furnace using natural gas as the energy source (No. 2 diesel oil was formerly used to fire the furnace). Non-contact cooling water used in the reheat furnace was processed through the cooling tower and recycled into Bar Mill operations. Cooling tower blowdown was discharged to National Pollution Discharge Elimination System (NPDES)-regulated outfall 001. All discharges from the Bar Mill were processed through the Bar Mill Waste Water Treatment Plant (WWTP).

Once the billets were reheated to the desired temperature, they would pass through the scale breaker stand equipped with high-pressure sprays that removed scale from the surface of the heated billets. Process water containing the scale was piped to the scale pits where the scale was dewatered and

transported to the Sinter Plant for recycling. Waste water associated with the scale pits was treated, processed through the cooling tower, and recycled to the bar mill operation. After descaling, the billets were processed through the rolling mill and then processed through either hot bed cooling or coiler and annealing furnace to produce the end product. Petroleum based lubricants were used throughout the Bar Mill operation.

2.2.3 Steel Roll Refurbishing

No. 6 Roll Shop operations began in 1969 and continued until IHLC was idled in 2015. Rolls were processed through roll lathes to remove material and re-finish the roll surface to designated size, crown shape, and surface texture. Roll lathe baghouse dust was collected for recycling. Roll lathe turnings (scrap steel) were recycled to the Basic Oxygen Furnace. After lathe processing, the rolls were processed through the shot blaster. Upon restoration, the rolls were taken back to the mill of origin for further service. Shot blasting baghouse dust was collected for recycling or shipped off-site for disposal. Previously, both roll lathe baghouse dust and shot blasting baghouse dust may have occasionally been used as fill material in the northern end of the IHE facility until approximately 1993.

Degreasing chemicals, such as trichloroethene (TCE) and tetrachloroethene (PCE), were used historically at Plant 4 until approximately 1993 and were replaced by sodium hydroxide, which was used until the plant was idled in 2015. The degreasing chemicals were used to clean roll bearing housings and gearboxes during disassembly prior to roll processing. When in use, PCE was stored in an above ground storage tank (AST) formerly located west of the No. 6 Roll Shop.

2.2.4 Waste Water Treatment

Waste water treatment operations to service the Bar Mill and EAF were conducted at the IHLC property from 1969 until IHLC was idled in 2015. Cooling tower blowdown from the Bar Mill and EAF was discharged to NPDES outfall 001. Waste water (sand filter backwash) from the EAF was sent to the Bar Mill Waste WWTP for treatment. All discharges from the Bar Mill were processed through the Bar Mill WWTP. The treated waste water was then passed over a cooling tower and recycled to the Bar Mill and billet reheat furnace.

Sludges from the treatment process were dewatered and either recycled through the Sinter Plant or were transported off-site for disposal. Previously, these sludges were used as miscellaneous fill at the northern end of the IHE facility.

3. Conceptual Site Model

The Conceptual Site Model (CSM) for the entire IHE facility was first presented in the *RCRA Facility Investigation Work Plan – Ispat Inland Inc.* ([RFI Work Plan]; Earth Tech, 2003) approved by U.S. EPA on 24 July 2003. A revised CSM was submitted as part of the *Phase II RFI Facility Investigation Report – Facility Perimeter Areas* ([Phase II RFI - FPA Report]; AECOM 2009). ArcelorMittal received comments from the U.S. EPA concerning the CSM on 13 September 2011. The comment(s) associated with the CSM were addressed within the *Revised Response to U.S. EPA Review Comments for the Phase II RFI - FPA Report* (AECOM, 2015), which the U.S. EPA found to be to be "acceptable and sufficient." The purpose of the CSM is to identify relevant site characteristics, information on the sources of contamination, and the environmental transport and potential exposure pathways that may be relevant in evaluating potential exposures to human and ecological receptors. A graphic representation of the CSM as it applies to the IHLC property is included as Figure 3.

3.1 PHYSTICAL SITE SETTING

As detailed in the Phase I RFI – SWMA 2 (Law, 1999) and Phase II RFI – FPA Report (AECOM, September 2009), this section includes an evaluation of surrounding land use, and a summary of the physical IHLC property setting including a general description of regional and site-specific geology and hydrogeology.

3.1.1 Regional Physiography and Geologic Setting

The IHLC property is located within the Calumet Lacustrine Plain physiographic province, a part of the North Moraine and Lake Region, where the upper 150 to 250 feet of soils are the result of glacial activity (Hartke et al., 1975). The resulting physiography of northwestern Indiana features a series of dunes which form ridges oriented parallel to the present shoreline of Lake Michigan. These features were created by historic Lake Chicago, a precursor to Lake Michigan. Poorly drained lowlands were present between these ridges. Subsequent commercial/industrial development of northwestern Indiana resulted in the modification of many of these land forms, particularly within the first few miles south of Lake Michigan. Many of the sandy ridges were leveled to obtain soil to fill adjacent lowlands or for other construction purposes. Where development has been less dense, remnants of the intervals of ridges and adjacent lowlands remain.

The near-surface sandy soils of both on-shore beach and dune origin and off-shore shallow water origin are underlain by glacial lacustrine clays and clay till. In turn, the glacial deposits are underlain by sedimentary rocks, which include more than 4000 feet of limestone, dolomite, sandstone, and shale of Cambrian through Devonian age. The sedimentary rocks are relatively flat lying with a slight dip towards the east. A Precambrian granite basement underlies these strata (Hartke et.al.,1975).

The naturally occurring subsurface in northwestern Indiana can be divided into three separate aquifer systems: 1) the unconsolidated system, 2) the shallow bedrock system, and 3) the deep bedrock system (Hartke et.al., 1975). The two aquifer systems most relevant in the IHLC property area are the uppermost unconsolidated system in soils of glacial origin (the Calumet Aquifer) and the underlying shallow bedrock system.

The Calumet Aquifer system is the shallow groundwater aquifer located in the vicinity of the Grand Calumet River-Indiana Harbor Canal. The aquifer depends almost entirely on local precipitation for

recharge. Some local recharge from the underlying bedrock may also occur, although vertical leakage from the upper aquifer down through the underlying clays to the bedrock occurs in other areas. The aquifer is up to 60 feet in thickness and is underlain by about 100 feet of glacial till and lacustrine clay that overlies carbonate bedrock of Silurian age. Broad, low-relief water table mounds occur between the major surface water drains. Groundwater in the upper sands of the Calumet Aquifer system discharges to Lake Michigan and locally to ditches and sewer lines (Watson et. al., 1989). There is very limited use of water from these upper sands in the region due to low yield and questionable water quality and the readily available supply of domestic water from Lake Michigan.

3.1.2 Site Geology

As described in the Phase I RFI reports, the *Description of Current Conditions* (DCC) Report (Law, 1994), and other associated documents, the general (naturally occurring) stratigraphy for the IHE facility is characterized by sand, gravel, and clay deposits of the Pleistocene age Calumet Aquifer overlying glacial till and Silurian-age carbonate bedrock. Where undisturbed and exposed at ground surface, the uppermost naturally occurring deposits at the IHLC property consist of fine- to medium-grained sand approximately 25 feet thick containing thin discontinuous lenses and stringers of fine gravel interbeds. At a depth of approximately 25 feet, the fine- to medium-grained sand transitions to greenish-grey, fine-grained silty sand with a thickness of approximately 10 to 15 feet. This silty sand is typically homogeneous with little to no gravel except for a very thin, fine-grained gravel layer that is often present at the contact with the underlying clay unit. Methane has been reported throughout much of this silty sand unit. The presence of methane was inferred by soil sample headspace screenings in which elevated readings were measured with flame ionization detectors (FIDs), while measurements with photoionization detections (PIDs) indicated non-elevated results. This combination of results is generally considered to be indicative of methane, typically resulting from the decomposition of organic matter. The presence of methane is consistent with the low dissolved oxygen content and strong reducing conditions that were typically observed in groundwater collected from this horizon. The apparent presence of methane in non-impacted wells suggests that the methane may be, at least partially, naturally occurring, and that soil sample headspace screening may not be indicative of chemical impacts to the soil/groundwater.

The clay unit consists of 40 to 50 feet of silty lacustrine clay underlain by 50 to 60 feet of glacial till. Silurian-aged dolomitic carbonate bedrock is typically encountered approximately 145 feet below ground surface (bgs) and is typically several hundred feet in thickness.

Approximately 1,800 acres of the approximately 2,400-acre IHE facility are the result of placement of fill materials into Lake Michigan. These fill materials can generally be classified as “engineered” fill and “non-engineered” fill, which typically differ in composition as well as in the methods of placement. The IHLC property was developed on an area of “non-engineered” fill material primarily composed of iron and steel-making slag present on top of, or intermixed with, the naturally occurring sands, gravels, and clays. Fill materials at the IHLC property have a thickness range of only 2 to 5 feet.

3.1.3 Site Hydrogeology

As described in the Phase I RFI reports, the DCC Report (Law, 1994) and other associated documents, shallow groundwater at the IHE property is present primarily in the Calumet aquifer, which was briefly discussed above. This surficial aquifer is typically 40 to 60 feet thick, with 30 to 40 feet of that being saturated. The underlying lacustrine clay and glacial till comprise the lower confining layer of the

aquifer, forming a barrier to groundwater flow vertically between the Calumet aquifer (shallow groundwater) and the carbonate bedrock. Shallow monitoring wells installed at the IHE facility generally are installed in a manner such that the well screen intersects the water table, and deep monitoring wells are screened in the lower portion of the surficial aquifer (above the lacustrine clay). Groundwater flow at the IHE facility can be characterized based on whether the area being described is located inland from the original Lake Michigan shoreline or if it is part of the peninsular portion of the facility that has been created in the process of IHE facility expansion. Shallow groundwater at the IHLC property is not used for either potable or non-potable purposes.

Groundwater flow in the non-peninsular portions of the IHE facility, including the IHLC property, is generally less complicated than the peninsular portion of the facility, attributed primarily to the minimal effects of revetment structures, and the lack of significant quantities of fill material in the subsurface. Groundwater throughout most of peninsular portions flows to the west, ultimately discharging to the IHSC. According to the *October 2013 Site Wide Potentiometric Surface Map* (AECOM), groundwater flow in the IHLC property vicinity is to the northwest, towards the IHSC.

An aquifer pump test was performed in the vicinity of the Former C Battery Coke Plant By-Products Recovery Area located adjacent north of the IHLC property, in 1997 (*Aquifer Test Report Former C Battery By-Products Recovery Area - Ispat Inland Inc.,* LAW, 1998) and inland of the original Lake Michigan shoreline. The results of this pump test indicate average K values ranging from 9.2×10^{-2} centimeters/second (cm/s) for the shallow aquifer zone to 4.3×10^{-3} cm/s for the deep zone. The results of the aquifer test are expected to be roughly representative of much of the inland (natural land) portions of the IHE facility, including the IHLC property.

3.2 RISK SCREENING PROCESS

As described in the *RCRA Field Investigation Work Plan* (Earth Tech, 2003), the risk evaluation at the IHE facility is performed using a multi-tiered approach, following Indiana Department of Environmental Management's (IDEM) RISC and U.S. EPA standard risk assessment guidance as appropriate (IDEM, 2004 and U.S. EPA, 1989; 1991b; 1992a,b; 1997a), as well as information from the scientific literature.

3.2.1 Potentially Exposed Ecological Receptors

Based on the results of the previously conducted and U.S. EPA-approved IHE facility site-wide *Preliminary Ecological Risk Assessment* ([PERA]; Law, 1998), chemical stressors originating from the former coking operations or incidental spills occurring in groundwater (transport medium) are important ecologically at the IHLC property only after cross-media transfer to off-site surface waters. As such, the primary ecological receptors of interest are those aquatic and aquatic-dependent organisms exposed to adjacent off-site surface water potentially containing chemical constituents derived from discharges of IHLC property groundwater. The primary approach for evaluating the risk to these surface-water-associated ecological receptors was through comparison of groundwater constituents to promulgated state and/or federal Ambient Surface-Water Quality Criteria (ASWQC) for chronic effects as procedurally implemented by IDEM and U.S. EPA; and/or appropriately derived and applied effects-based guidance values published by U.S. EPA (e.g., Ecological Screening Values for RCRA Appendix IX Constituents, U.S. EPA, Region 5).

3.2.2 Tiered Screening Process

The first tier of that evaluation consists of a comparison of investigative analytical results against Tier 1 screening criteria that are intended to conservatively identify constituents of potential concern (COPCs). The Tier 1 Screening Process, relative to the IHLC property, is further broken down as follows:

- Tier 1A Screening Criteria: Chemicals detected in groundwater and/or surface water are compared to readily available conservative risk-based criteria, applicable and appropriate state and federal ambient surface water quality human health criteria, and/or site and local background concentrations to identify COPCs to off-site receptors. For human health risk screening, Tier 1A screening is conducted using a target cancer excess risk level of 10^{-5} and a target hazard index (HI) of 1 for carcinogens and non-carcinogens, respectively as applicable. Tier 1A Screening Criteria are listed in Table 1, Summary of Groundwater Analytical Results.
- Tier 1B Screening Criteria: Concentrations of COPCs identified in Tier 1A screening are compared to site/ investigative area-specific derived risk-based screening levels, which can incorporate site-specific exposure parameters, as necessary, to further refine the list of COPCs. For human health risk screening, Tier 1B screening is conducted using a target cancer risk level of 10^{-5} and a target HI of 1 for non-carcinogens, as applicable.

  As outlined in the Phase II RFI - FPA Report (AECOM 2009), the first step in the Tier 1B evaluation of the recreational users of the identified surface water bodies of potential concern was to apply a conservative dilution factor to the Tier 1A Screening Criteria, and then compare the resulting values to Facility Perimeter Area (FPA) groundwater data. As necessary, site-specific, default and non-default, Tier 1B Screening Criteria were developed for exposure to off-site migration of groundwater, as it relates to off-site construction/utility worker exposures. The development of the default and non-default criteria is detailed in the Phase II RFI – FPA Report.

3.3 CORRECTIVE ACTION PROGRAM STATUS

The approximate 92-acre IHLC property was divided and assessed as multiple investigation areas over the last 25 years including SWMA 2, southern part of SWMA 3, FPA 6, southern part of Interior Source Area (ISA 3), and Facility Interior Area (FIA) 6. Each assessment area was investigated in accordance with a U. S. EPA approved Sampling and Analysis Plans (SAP) consistent with the U.S. EPA-approved Quality Assurance Project Plan (QAPjP). A Site Plan showing the investigation areas relative to the Site is presented as Figure 4. A summary of RFI activities relative to the IHLC property is summarized in the following sections and in Table 2. Sample locations are included on Figure 5.

Table 3.3: Summary of Submittals to the U.S. EPA

Submittal to U.S. EPA	Review/ Action Required by Agency	Date Submitted	Date Approved[1]
Consent Decree - Signed 3/8/1993	-	N/A	N/A
Pre-Investigation Evaluation of Corrective Measures Technologies Applicable to Remediation of Contamination Facility-Wide	Official Review	12/3/1993	N/A
DCC	Official Review	12/3/1993	N/A

Submittal to U.S. EPA	Review/ Action Required by Agency	Date Submitted	Date Approved[1]
RFI Work Plan and QAPjP (includes SAP for SWMA 3)	Official Review/Approval	12/5/1996[2]	5/17/1997[3]
Corrective Action Management Unit Application	Official Review/Approval	1/21/1998	8/12/1998
Preliminary Ecological Risk Assessment Report	Official Review/Approval	3/4/1998	11/1/1998
Phase I RFI SWMA 2 SAP	Official Review/Approval	3/20/1998	4/8/1998
Phase I RFI SWMA 2 (Screening) Report	Official Review/Approval	10/8/1998	6/6/2000
Phase I RFI SWMA 3 (Screening) report	Official Review/Approval	3/24/1999	5/12/1999
Phase II RFI FIA SAP	Official Review/Approval	3/28/2000	4/29/2008
Laboratory Audit and QAPjP Approval Request	Official Review/Approval	4/9/1999	5/13/2000
Revised Phase II RFI Workplan (including QAPjP) and Response to EPA Comments	Official Review/Approval	6/16/2003[2]	9/4/2003[3]
Phase II FPA 6 SAP	Official Review/Approval	4/3/2004	5/26/2004
Double-Blind Performance Evaluation Sample Results Analyzed as STL-North Canton Laboratory	Official Review/Approval	4/23/2004	11/16/2004
Environmental Indicator CA 725 Determination	Official Review	8/30/2005	N/A
Environmental Indicator CA 750 Determination	Official Review	9/28/2005	N/A
Phase II ISA 3 SAP	Official Review	3/9/2007	3/26/2007
Revised Documentation of EI CA 750 Determination	Official Review	4/11/2007	N/A
Phase II RFI FPA Report	Official Review/Approval	10/7/2009	Comments Received 9/13/2011
Phase II RFI FIA High Resolution Confirmation SAP	Official Review/Approval	2/26/2010	5/13/2010
Phase II RFI ISA Report	Official Review/Approval	1/4/2012	Comment Received 6/7/2012
Response to Phase II RFI FPA Report Review Comments (9/13/2011) with Revised CSM	Official Review/Approval	4/4/2013	Comments Received 8/29/2013
Phase RFI FIA Data Summary Tables (Quarterly Report)	Complimentary Review	10/28/2013	N/A
Draft Revised Text for Section 2.5.3 of the Phase II RFI FAP Report	Official Review/Approval	9/17/2014	Comments Received 6/2/2015
Phase II RFI - Revised Response to FPA Report Review Comments (8/29/2013)	Official Review/Approval	3/12/2015	6/2/2015

Submittal to U.S. EPA	Review/ Action Required by Agency	Date Submitted	Date Approved[1]
Responses to Comments on the Draft Revised Text for Section 2.5.3 of the Phase II RFI FPA Report	Official Review/Approval	8/24/2015	5/24/2016

Notes:

1. As of 27 April 2017
2. Most recent submittal: addressed U.S. EPA comments required for conditional approval
3. Conditionally Approved: Phase I activities fully approved; Phase II approval pending resolution of laboratory QAPjP-related issues, lab approved 2 May 2000.

N/A – Not Applicable

3.3.1 Summary of Phase I RFI Status and Results

RFI activities were implemented at the IHE facility in a multi-phased approach, beginning with Phase I Screening (completed), followed by more focused and detailed evaluation in Phase II (ongoing). The Phase I RFI consisted of a facility-wide program of shallow groundwater sampling and analyses from approximately 540 locations, coupled with hydrogeologic characterization and extensive review of the IHE operational history. The primary purpose of Phase I RFI Screening was to focus the subsequent Phase II RFI activities by quantitatively assessing the location, and the relative significance of impacts to groundwater. A summary of Phase I RFI Screening assessment and results relative to the IHLC property is summarized below and in Tables 1 and 3 and on Figure 6 (Summary of Exceedances in Groundwater).

- Prior to the Phase I RFI, as summarized in the DCC Report (Law, 1994), a limited groundwater quality study was conducted in 1990/1991 for the IHE facility and included the installation of two piezometers, P-02A (SWMA 2) and P-02B (SWMA 3), on the IHLC property. The groundwater analytical results for piezometer P-02B (Tables 1 and 3) indicate concentrations of inorganic compounds (chromium, copper, lead, and cyanide) exceeded Tier 1A Screening Criteria for Ecological Receptors. Further, benzene was detected at concentrations in excess of Tier 1A Screening Criteria for both Ecological and human receptors. With the exception of arsenic concentrations at P-02B, which exceed Tier 1A Screening Criteria for Industrial/Commercial exposure to groundwater at P-02B, the groundwater within this area of the IHLC property was assessed further during Phase I and Phase II RFIs, discussed below.
- The IHLC property includes the 56-acre SWMA 2 in its entirety, as designated in the DCC Report (Law, 1994), which consists of the southern portion of Plant 4. As discussed in Section 2.2, historical operations in SWMA 2 included steel-making and finishing, steel roll refurbishing, and waste water treatment. Field activities for the Phase I RFI began during April 1998 and were completed in September 1998. The *Phase I RCRA Facility Investigation (Screening) Report – SWMA 2* ([Phase I RFI – SWMA 2]; Law, 1999) was submitted to the U.S. EPA on 8 October 1999, final revisions were submitted on 30 May 2000, and approval was received from the U.S. EPA on 6 June 2000.

  Twenty-four first water samples (IFW-02-00001 through IFW-02-00025) were collected within SWMA 2 (IHLC property) during the Phase I RFI (Table 2 and Figure 5). Of the 24 first water locations, 13 locations were converted piezometers to collect groundwater elevation data, and three locations (IMW-02-00001 through 00003) were converted to monitoring wells to facilitate metals screening. The findings of the Phase I RFI -SWMA 2 indicate the following (Tables 1 and 3):

- VOCs, naphthalene, TCE, and PCE, were detected in groundwater at concentrations greater than at least one Tier 1A Screening Criteria. Naphthalene was detected in an area of reported surficial spillage from a diesel AST in the southwestern area of the IHLC property, and TCE/PCE were detected in the vicinity of a solvent AST west of the No. 6 Roll Shop. Groundwater conditions within this area of the IHLC property was further assessed during the RFI for FIAs (Section 3.3.2.3).
- Inorganic compounds, including iron and manganese, were detected at concentrations in excess of at least one Tier 1A Screening Criteria in groundwater near the western and southeastern property boundaries. Downgradient groundwater conditions of the IHLC property were further assessed during the RFI for FPA (Section 3.3.2.1).

- The IHLC property consists of the southern part of SWMA 3, which includes former Plant 3 (blast furnaces and Coke Batteries and Byproducts Recovery) and the northern portion of Plant 4, as designated in the DCC Report. The *Phase I RCRA Facility Investigation (Screening) Report - SWMA 3* ([Phase I RFI – SWMA 3]; Law, 1999) was submitted to the U.S. EPA in March 1999 and received approval from the U.S. EPA on 12 May 1999.

  Relative to the IHLC property, 20 first water samples (IFW-03-00001, -00002, -00004, -00008, -00014, -00015, -00018, -00019, -00023, -00029, -00029A-E, -00031, -00032, - 00038, and IMW-03-0004 and -00007) were collected within SWMA 3 during the Phase I RFI (Table 2 and Figure 5). Of the 20 first water locations, three locations were converted piezometers to collect groundwater elevation data, and two locations (IMW-03-00004 and -00007) were converted to monitoring wells. The findings of the Phase I RFI-SWMA 3, relative to the IHLC property, indicate the following (Tables 1 and 3):
  - VOCs, including benzene and naphthalene, were detected in groundwater at concentrations in excess of at least one Tier 1A Screening Criteria in areas downgradient of the former Plant 3 Coke By-Products Recovery Area. Groundwater samples were collected in the vicinity of piezometer PZ-02B to confirm previously reported elevated benzene concentrations. The analytical results of the RFI Phase I groundwater samples indicate concentrations of benzene were significantly reduced, but the concentrations remained in excess of Tier 1A Screening Criteria. Subsequent groundwater sampling performed as part of Phase II RFI activities, discussed below, did not report detections of benzene at concentrations in excess of Tier 1A Screening Criteria.

3.3.2 Summary of Phase II RFI Status

With the completion of Phase I RFI activities described above, CA efforts at IHE shifted to address the Government Performance and Results Act (GPRA) Environmental Indicators (CA 725 and CA 750) and Phase II of the RFI. These efforts were intended to confirm and refine the Phase I results and to fill data gaps associated with the overall objectives of the RFI as defined in the Consent Decree. The Phase II activities consisted of a risk-based evaluation of potential impacts to environmental receptors present on and adjacent to IHE resulting from exposure to site-related contaminants. This evaluation was implemented from the perimeter of the facility inward, with the primary focus on those portions of the facility perimeter that were believed to pose the greatest potential risk to off-site environmental receptors. Interior portions of the IHE facility, including identified source areas, were also evaluated in the Phase II RFI.

As described in the RFI Work Plan (Earth Tech, 2003), the results of the Phase I RFI activities and the requirements for completion of the GPRA Indicators report were the basis for the selection of the

Phase II RFI for the following investigative areas (in order of assessment): FPAs, ISAs, and FIA. The IHLC property is comprised of investigative areas FPA 6, ISA 3, and FIA 6, as shown on Figure 4 and discussed in the following subsections.

3.3.2.1 Facility Perimeter Area 6

Because off-site migration of groundwater is associated with the most significant potential exposure scenarios at the IHE facility, perimeter investigations were implemented ahead of, or concurrently with, the other investigative areas. An FPA is designated as the area of the facility lying between the property boundary and a line drawn 300-feet interior and parallel to the property boundary. FPA 6 consists of the perimeter portions of SWMA 2 and SWMA 3 on the IHLC property. The *Phase II RFI Sampling and Analysis Plan – Facility Perimeter Area 6* (Earth Tech, 2004) was approved by the U. S. EPA on 26 May 2004. The Phase II RFI - FPA Report (AECOM, 2009) was submitted to the U.S. EPA on 7 October 2009. The U.S. EPA responded with comments to the report on 29 August 2013. In a response letter dated 2 June 2015, the U.S. EPA found the responses included within the *Revised Response to U.S. EPA Review Comments for the Phase II RFI - FPA Report* (AECOM, 2015), to be to be acceptable and sufficient.

Investigative activities in FPA 6 were initiated in June 2004 and are now complete. Two rounds of groundwater sampling were reported in the Phase II RFI- FPA Report from one on-site well cluster, monitoring wells IMW-03-0008S and IMW-03-0008D, located on the IHLC property.

- Inorganic compounds, iron, manganese, and arsenic, were detected in shallow and deep groundwater at concentrations in excess of at least one Tier 1A Screening Criteria; however, concentrations of these inorganic compounds did not exceed either default, or non-default Tier 1B Screening Criteria. Located at the western perimeter of the IHLC property, the likely source of the iron and manganese in IHE groundwater is the slag fill used for site expansion activities and construction, strongly influenced by groundwater pH. The source for arsenic is likely the separate phase plume associated with the upgradient Former C-Battery by Products Recovery Area.
- Ammonia was detected in deep groundwater in excess of the ecological Tier 1A Screening Criteria; however, ammonia concentrations did not exceed the Tier 1B Default Screening Criteria. The believed source of the ammonia is the upgradient Former C-Battery By-Products Recovery Area.

3.3.2.2 Interior Source Area 3

For the purpose of implementing the Phase II RFI, three ISAs (ISA 1 through 3), situated interior of the FPAs, were identified for the IHE facility, which are believed to be the most significant potential sources of organic compounds in the subsurface. A portion of the IHLC property is located within ISA-3 (Figure 4), which includes the non-perimeter areas north of SWMA 2 and the non-perimeter areas of SWMA 3. The ISA investigations focused on characterization of these potentially significant source areas relative to fate and transport mechanisms and source removal/ stabilization/ attenuation and addressed risk only as it's related to migration towards perimeter areas. Each of these areas includes significant volumes of Non-Aqueous Phase Liquids (NAPLs), either in the form of continuous plumes or as discontinuous masses.

One of these significant source areas was identified in SWMA 3, which included the area light non-aqueous phase liquid (LNAPL) at the western end of the former C Battery Coke Plant By-Products

Recovery Area (Note, this plume was not present on the IHLC property, but was located upgradient relative to the IHLC property). A system operated in this area between 2000 and 2014 reducing LNAPL plume thickness by approximately 90% and recovering approximately 90% of the LNAPL. Additionally, beginning in 1999, ArcelorMittal conducted annual monitoring of wells installed hydraulically downgradient of the NAPL plumes, including one deep/shallow monitoring well pair, IMW-03-0008S/8D, located on the IHLC property. The purpose of this annual sampling program was to monitor the groundwater conditions downgradient of the NAPL plumes to verify that dissolved constituents were not significantly migrating beyond their present boundaries.

The March 2007 *Phase II Sampling and Analysis Plan (SAP) – Interior Source Areas* (Earth Tech) for all ISAs was approved by U.S. EPA on 26 March 2007. Investigative activities (well installation, development, and sampling) in ISA 3 were initiated in April 2007. Data evaluation for the ISA Report has been completed and results have been submitted. Semi-annual groundwater sampling in this area continues to the present, as well as annual long-term groundwater sampling downgradient of the LNAPL plume. The *Phase II RCRA Facility Investigation Interior Source Area Report* ([Phase II RFI-ISA Report]; AECOM) was submitted to the U.S. EPA in January 2012. The U.S. EPA responded with comments to the Phase II RFI-ISA Report on 7 June 2012. Based on the information available, final preparation of the response to comments has not been completed. The findings of the Phase II RFI – ISA Report indicate the following (Tables 1 and 3):

- Similarly reported in the RFI Phase II – FPA Report, groundwater detections at monitoring well cluster IMW-03-0008S/D of inorganic compounds (iron and manganese) and ammonia (IMW-03-0008D only) remained at concentrations in excess of Tier1A Screening Criteria (off-site human and ecological receptors). However, concentrations of these analytes did not exceed the Tier 1B Default/Non-default Screening Criteria. Arsenic was previously reported during the FPA investigation in a deep groundwater sample collected from IMW-03-0008D; however, during the ISA investigation, arsenic was not detected greater than the laboratory reporting limit.
- During the FPA investigation, cyanide was not reported at concentrations greater than laboratory reporting limits in monitoring wells IMW-03-0008S/D. However, during the ISA investigation, cyanide was detected in both shallow and deep groundwater in these wells at concentrations greater than Tier 1A Screening Criteria (ecological receptors). However, cyanide concentrations did not exceed the Tier 1B Default/Non-default Screening Criteria. Cyanide is commonly associated with coking by-product operations, and the likely source is the upgradient Former C-Battery By-Products Recovery Area.
- VOCS and SVOCs were either not detected or were detected less than Tier 1A Screening Criteria during the RFI-ISA investigation. Further, according to the *March 2017 Monthly and First Quarter 2017 Progress Report* (AECOM, 2017), concentrations of VOCs and SVOCs in groundwater have been reduced to less than laboratory reporting limits since 2009 in downgradient groundwater wells, including IMW-03-00008S/8D. The exception would be detections of bis(2-ethylhexl)phthalate at IMW-03-00008D; however, this compound was not detected greater than laboratory reporting during the most recent groundwater sampling event, and further, likely represents a laboratory contaminant.

3.3.2.3 Facility Interior Area 6

While the FPA and (to a lesser extent) the ISA evaluations were intended to address the potential excess risk to environmental receptors resulting from contaminant releases at IHE, the seven FIA evaluations were only intended to address future potential excess risk associated with on-site contaminant releases.

The FIAs were subdivided based on expected scope and similarity of conditions. The IHLC property includes FIA 6, which comprises the non-perimeter area of SWMA 2 (Figure 4). The March 2008 *Phase II RFI Sampling and Analysis Plan – Facility Interior Areas* (Earth Tech) was approved by the U. S. EPA on 29 April 2008. Investigative activities began in May 2008. The *Summary of Planned Phase II RFI FIA High Resolution Confirmation Sampling Activities* (AECOM) was submitted to the U.S. EPA on 26 February 2010 and received approval on 13 May 2010. Field work was completed in November 2010. Because ArcelorMittal anticipated that submittal of a number of other documents would take precedence over submittal of the Phase II RFI FIA Report, analytical data tables for the FIA sampling were presented in the *September 2013 Monthly Report and Third Quarter 2013 Progress Report* (AECOM, October 2013) in advance of a full Phase II RFI FIA Report.

One monitoring well cluster was installed within FIA 6 (IMW-02-00004S/D), on the IHLC property in the vicinity of previously reported exceedances of VOCs in groundwater (IFW-02-00013 and IFW-02-0023) near a former solvent AST (Table 2 and Figure 5). The findings of the FIA investigation indicate the following (Tables 1 and 3).

- In the area of the former solvent AST, groundwater samples did not report detections of TCE or PCE at concentrations greater than Tier 1A Screening Criteria. However, vinyl chloride, a degradation product of TCE and PCE, was detected in shallow groundwater at concentrations in excess of Tier 1A Screening Criteria.
- Similar to the results of the FPA and ISA investigations, inorganic compounds, iron and manganese, were detected in deep groundwater at concentrations in excess of Tier 1A Screening Criteria. Likewise, ammonia was detected in deep groundwater at concentrations in excess of Tier 1A Screening Criteria (off-site human and ecological receptors). However, since these analytes do not exceed on-site Tier 1A Screening Criteria for industrial/commercial exposures, these potential impacts are relevant to off-site receptors, which based on the results of the RFI-FPA, do not exceed relevant Tier 1A and/or Tier 1B Screening Criteria.

The final RFI Report for the IHLC property, which is not yet completed, will be comprehensive to include all other reports (ISAs, FIAs, and Surface Soil Sampling Reports).

3.4 RISK EVALUATION

As described in the Documentation of *Environmental Indicator Determination* ([EI Determination]; Earth Tech, 2005) and RFI Work Plan (Earth Tech, 2003), the evaluations of current human exposures at the IHE facility were based upon both empirical analytical data from previous site investigations, as well as qualitative assessments of "reasonably expected" conditions. These evaluations were predicated upon an understanding of the potentially exposed receptors and associated pathways, thus providing the basis for selection of the "appropriately protective risk-based levels" as described in Section 3.2.

3.4.1 Groundwater Use

Groundwater under the IHLC property and in the adjacent areas is not currently used for potable purposes, and there are no known plans to use groundwater for such purposes in the future. Further, there are no known or expected incidental uses of groundwater in adjacent areas for uses such as irrigation or industry. Drinking water in the area is provided by the city of East Chicago whose public water supply intake structure is located in Lake Michigan approximately 0.5 mile north of the original shoreline and one-half mile from the eastern boundary of the IHE facility.

3.4.2 Land Use

The IHLC property is located in a heavy industrial area of East Chicago, Indiana, approximately 4,000 feet south of the Lake Michigan shoreline. The IHLC property includes former IHE Plant 4, which was constructed in the early 1940s, during World War II, to produce cast armor for use in military battle tanks. Because the plant was initially constructed as a cast armor plant, there are few sub-grade structures (e.g., pits, trenches, sumps) present that are typical of steel mills. Further, much of the now vacant property is covered by asphalt/concrete pavement, rail spurs, access roads, and structures. In addition, Plant 4 was constructed predominantly on the original Lake Michigan shoreline and in general only 2 to 5 feet of fill material underlies the IHLC property. Access to the IHLC property is highly controlled through security fencing and 24-hour guarded checkpoint entry; and therefore, the occurrence of trespassers on the IHLC property is highly unlikely.

IHLC is bound on the west by the IHSC, to the east by Dock Street and rail lines followed by Chrome LLC, to the north by Dickey Road and former Plant 3, and to the south by American Terminals and Kemira. According to the most recently available zoning classifications for the City of East Chicago, Indiana (2003), adjacent properties to the IHLC property are zoned heavy industrial. There are no residential land uses associated with properties adjacent to the Site. The IHSC is located adjacent west of the site, which although unlikely, may be used for recreational purposes. Further, the following are neither located on the IHLC property nor located within the immediate vicinity of the IHLC property:

- Day-care facilities;
- Residences;
- Ecological receptors (excluding the ISHC); and
- Food sources.

3.5 POTENTIALLY EXPOSED HUMAN RECEPTORS

Based on the information presented herein, and the results of the evaluation presented in *the EI Determination* and *Phase I and II RFIs*, as they pertain to the IHLC property, the potentially complete human exposure pathways are as follows:

- Recreational users of surface water bodies situated adjacent to the IHLC property, where groundwater to surface water discharges occur;
- Off-site construction/utility workers on adjacent industrial properties where contaminated groundwater may be migrating to off-site locations;
- On-site construction/utility workers who are potentially exposed to contaminated surface and subsurface soils and groundwater at the IHLC property; and
- On-site industrial workers who are potentially exposed to contaminated surface soils at the IHLC property.

The following subsections briefly describe the receptors, the exposure pathways, and the rationale for criteria selection at the IHLC property. For a more complete description of these items, please refer to the approved RFI Work Plan (Earth Tech, 2003) and the EI Determination (Earth Tech, 2005).

3.6 EXPOSURE PATHWAY EVALUATION

The following subsections provide a brief evaluation of the potential for receptor exposure to those identified media.

3.6.1 On-Site Groundwater Exposures

As summarized in Section 3.4 and Table 1, groundwater in some areas of the IHLC property contains chemicals of concern (COCs) detected at concentrations above the applicable Tier 1A Screening Criteria. The status of groundwater exposure pathways for the specified potential human receptors at the IHLC property are described as follows:

- Future On-Site Industrial Workers: Future on-site workers would not be exposed to contaminated groundwater during the course of their daily work activities. As stated previously, groundwater is not used at the IHLC property as a potable or non-potable water supply. Therefore, this exposure pathway is incomplete.
- On-Site Construction Worker: Excavations made by on-site construction workers involved in activities such as construction and/or utility installation and maintenance may extend below groundwater level where contaminants may be present. However, on-site construction and utility worker exposures are controlled by way of institutional controls on workers involved in excavations and related dewatering activities. Ispat Inland Policy No. 261, Procedure ENV-P-021, and Ispat Inland Compliance Program for 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response, formalize IHLC's (formerly Inland's) excavation permitting and worker protection program. The program establishes a permitting framework and general requirements and responsibilities to ensure that excavation and de-watering activities at the IHW are handled in a manner that is consistent with the hazardous waste regulations and minimizes the potential for worker exposure to potentially hazardous environmental contaminants. Where large excavations and/or related dewatering activities are planned, such as when major new facilities are constructed, program policies require that a project-specific human health risk evaluation be conducted to protect human health and the environment. The worker protection program applies to all Inland employees and outside contractors who engage in excavation and dewatering activities at the facility. These policies have been incorporated into IHE/IHLC Environmental Management System under its ISO 14001 International Standard and are tracked and audited accordingly. Due to the current and on-going implementation of these policies and procedures, this exposure pathway is incomplete. In the event of the sale of the IHLC property, the institutional control will stay with the property.

3.6.2 Off-Site Groundwater Exposure Potential

Groundwater at the IHLC property is the primary environmental medium that has the greatest potential for causing contaminant migration to off-site locations. As such, the medium is most likely to be associated with potentially complete exposure pathways for off- site receptors. Based on the current and expected land use scenarios at and adjacent to the IHLC property, human exposure pathways are potentially complete for the following receptor groups:

- Recreational users exposed to adjacent off-site surface waters that may receive impacted groundwater. The contaminant migration via groundwater discharge to adjacent surface waters

leading to exceedance of ambient water quality screening criteria poses a limited but potentially complete pathway of exposure for off-site receptors.

- Off-site construction/utility workers exposed to groundwater and associated saturated subsurface soils as a result of groundwater migrating from the IHLC property to adjacent off-site construction sites where excavations are involved.

3.6.3 On-and Off-Site Surface Soil

Potential impacts associated with other former facility operations and with incidental spills may have occurred on the IHLC property. However, much of the IHLC property, as well as surface soils at off-site locations, are covered with concrete, asphalt, or industrial structures, thereby minimizing the probability of direct contact with on- and off-site surface soils. Potential impacts to the limited uncovered on-site surface soils have not been investigated during previous environmental assessments at the IHLC property. Further, ArcelorMittal has significant programs which control storm water run-off and fugitive dust emissions including a Storm Water Pollution Prevention Plan, which controls run-off to adjacent surface waters to the extent possible and includes Quarterly Inspections of the perimeter, and a Dust Control Plan which controls fugitive dust from roads, material storage piles, processing operations and material transfer activities. Due to the current and on-going implementation of these policies and procedures, this exposure pathway is incomplete. In the event of the sale of the IHLC property, the institutional control will stay with the property.

The status of surface soil exposure pathways for the specified potential on-site human receptors at the IHLC property are described as follows:

- Future On-Site Industrial Workers: Future industrial workers at the IHLC property are expected to have minimal exposure to surface soils during the course of their daily work activities. As stated previously, much of the IHLC property is covered with concrete, asphalt, or industrial structures, thereby minimizing the probability of direct contact with surface soils. Thus, the direct contact exposure pathway for future on-site industrial workers is incomplete.
- Construction Worker: ArcelorMittal has policies and procedures in place that manage construction worker exposures to potentially contaminated surface soils, as described above. These policies and procedures include documentation for permitting, tracking and auditing of construction activities and associated worker protection. Due to the current and on-going implementation of these policies and procedures, this exposure pathway is incomplete. These policies and procedures will stay with the property.

3.6.4 On-Site Subsurface Soils

Subsurface soils are defined as those below a depth of 2 feet below ground surface. Potential impacts to on-site subsurface soils have not been investigated during previous environmental assessment at the IHLC property. The status of subsurface soil exposure pathways for the specified potential human receptors at the IHLC property are described as follows:

- Construction Worker: Excavations made by on-site construction workers involved in activities such as construction and/or utility installation, have the potential to encounter impacted subsurface soils. However, on-site construction and utility worker exposures will be controlled by way of institutional controls on workers involved in excavations and related dewatering activities using the same policies and procedures as described above for surface soils. Due to

the current and on-going implementation of these policies and procedures, this exposure pathway is incomplete. These policies and procedures will stay with the property.

3.6.5 Off-Site Subsurface Soils

Based on the absence of historical operational practices at the IHLC property that would have directly resulted in significant off-site subsurface soil contamination, the only mechanism for such contamination is through the migration of contaminated groundwater from the IHLC property to off-site locations. As demonstrated by the perimeter groundwater evaluation (Section 3.3.2.1), migration of IHLC property groundwater in these areas is not "contaminated" with respect to industrial/commercial receptors, and therefore, the off-site subsurface soil exposure pathway is incomplete.

3.6.6 Sediment

There are no on-site surface waters and thus, no associated on-site sediments at the IHLC property. The surface waters and sediments of the IHSC have been impacted by numerous industrial and municipal discharge of contaminants. However, with regard to sediments, the U.S. EPA and ArcelorMittal have agreed that relative to RCRA Corrective Action at the IHE facility, assessment of the IHSC and Indiana Harbor sediments is not relevant because:

- As part of SEPs established by the Consent Decree, discussed previously in Section 1.5, ArcelorMittal will remediate working dock face sediments. The remainder of the IHSC and Turning Basin will be remediated by the U.S. Army Corp Of Engineers with funds supplied PRPs; and
- The contribution, if any, from the IHE facility, thereby the IHLC property, cannot readily be distinguished from the documented upstream sediment loading from other industrial facilities.

Therefore, based on the above, of this exposure pathway is incomplete for the IHLC property.

3.6.7 Indoor Air

The potential for impacts to indoor air quality at the IHLC property is primarily dependent upon two factors: 1) the presence of significantly contaminated soil or groundwater in close proximity to structures and 2) the physical characteristics of the structures.

While no direct measurements of the potential presence of volatile contaminants in indoor air have been conducted during RFI investigations, groundwater data that have been collected provide an indirect measure of the location and magnitude of potential indoor air exposures. In those areas outside of the former coking byproduct recovery and processing areas, including the IHLC property, structures are typically very large in size with very high rates of air exchange, thus making the accumulation of VOCs (if they were present in groundwater or soil) at concentrations of concern for human receptors not "reasonably suspected".

Groundwater flows from the IHLC property into the IHSC. Similarly, as indicated in the EI Determination (Earth Tech, 2005) during Phase I and Phase II RFI activities in the vicinity of FPA 6, concentrations of VOCs at the facility perimeter were found to be low or absent (Section 3.3). In order for elevated concentrations of organic compounds to be present in indoor air at levels exceeding risk-based human health criteria in the industrial setting present at/around the IHLC property, their respective

concentrations in groundwater would typically have to be orders of magnitude higher than those detected in FPA 6.

Therefore, based upon the considerations presented above, indoor air at and adjacent to the IHLC property is not reasonably suspected to be "contaminated" above appropriately protective human health risk-based levels.

3.6.8 Outdoor Air

As indicated in the EI Determination (Earth Tech, 2005), the potential for "contaminated" outdoor air at the IHLC property is primarily dependent upon the presence of significantly contaminated soil or groundwater in close proximity to the potentially exposed receptors combined with a limited amount of air exchange in the area. While no direct measurements of the potential presence of volatile contaminants in outdoor air have been conducted during the RFI, groundwater data that have been collected provide an indirect measure of the location and magnitude of potential outdoor air exposures, as presented in Section 3.3. In order for elevated concentrations of VOCs to be present in outdoor air at levels exceeding risk-based human health criteria in the industrial setting present at/around the IHLC property, their respective concentrations in groundwater would typically have to be orders of magnitude higher than those previously detected on-site.

Therefore, based upon the considerations presented above, outdoor air at and adjacent to the IHLC property is not reasonably suspected to be "contaminated" above appropriately protective human health risk-based levels.

3.6.9 Summary of Exposure Evaluation

Table 3.7A: On-Site Exposure Pathway Evaluation Table: Potential Human Receptors

Media	Residents[1]	Industrial Workers	Construction/ Excavation	Trespassers	Recreation[1]
Groundwater	NA	No	Yes[2]	NA	NA
Surface Water[2]	NA	NA	NA	NA	NA
Surface Soil	NA	Yes[3]	Yes[3]	Yes[3]	NA
Subsurface Soil	NA	No	Yes[3]	No	NA
Indoor Air	NA	Yes[3,4]	No	No	NA
Outdoor Air	NA	Yes[4]	Yes[4]	Yes[4]	NA
Sediment[2]	NA	NA	NA	NA	NA

Notes:

1. The Site is used for industrial purposes
2. No surface water bodies are present on the site
3. Potential exposure will be controlled with institutional/engineering controls
4. VOCs are not present within the subsurface at significant levels

Table 3.7B: Off-Site Exposure Pathway Evaluation Table: Potential Human Receptors

Media	Residents[1]	Industrial Workers	Construction/ Excavation	Recreation
Groundwater	NA	No	Yes[2]	Yes[2]
Surface Water	NA	No	No	Yes[2]
Surface Soil	NA	Yes[3]	Yes[3]	No
Subsurface Soil	NA	No	Yes[2]	No
Indoor Air	NA	Yes[4]	No	No
Outdoor Air	NA	Yes[4]	Yes[4]	No
Sediment	NA	NA	NA	Yes[5]

Notes

1. Properties in the vicinity of the Site are not used for residential purposes
2. Based on Phase II RFI – FPA results, COCs in groundwater are not migrating off-site at concentrations in excess of Tier 1A and/or Tier 1B Screening Criteria (human).
3. Potential exposure will be controlled with institutional/engineering controls
4. Based on Phase II RFI – FPA results and subsequent quarterly groundwater sampling results, VOCs in groundwater are not migrating off-site at concentrations in excess of Tier 1A Screening Criteria.
5. The surface waters and sediments of the IHSC have been impacted by numerous industrial and municipal discharges of pollutants. U.S. EPA has agreed that, relative to RCRA Corrective Action at the Site, assessment of the IHSC and Indiana Harbor sediments is not applicable.

4. RCRA Facility Investigation Data Sufficiency Evaluation

The RCRA First Tool 4 provides qualitative assessment questions, answered below, to determine whether data of sufficient quality exists to support assessment of risk.

1. Were adequate QA/QC procedures in place for any earlier data collected and associated objectives consistent with current DQOs?

   Yes, adequate QA/QC procedures were in place for earlier data collected. Two areas of data collection at the IHLC property were completed in December 1993, prior to U.S. EPA's approval of the RFI Work Plan and QAPjP, at sample locations P-2A and P-2B (Pre-Investigation Evaluation of Corrective Measures Technologies Applicable to Remediation Contamination Facility-Wide). These data were the only data that were not collected under the project QAPjP. However, these earlier data were presented in subsequent Phase I and Phase II RFI SWMAs 2 and 3 Reports to the U.S. EPA. Any inadequacies in the QA/QC procedures associated with these earlier data would have been addressed within these applicable reports, which were approved by the U.S. EPA on 6 June 2000 and 12 May 1999, respectively.

2. Were reporting limits sufficiently low to facilitate comparison to corresponding threshold levels?

   Yes, reporting limits were sufficiently low to facilitate comparison to corresponding threshold levels. *With the exception noted in Question No. 1, all data collected for the IHLC assessment areas were collected in accordance with U.S. EPA-approved RFI Work Plan and QAPjP. Variances in QA/QC procedures outlined in the approved QAPjP would have been identified within the applicable SAPs and subsequent RFI Phase I and Phase II Reports. The SAPs for the investigation areas as they apply to the IHLC property have been approved by the U.S. EPA. Further, the U.S. EPA has approved the Phase I RFI (Screening) Reports for SWMAs 2 and 3. Although the Final RFI Phase II Report for the IHE facility has not yet been submitted and approved, based on a review of the Phase II RFI FPA, ISA, and FIA (data only) Reports and subsequent U.S. EPA comments and ArcelorMittal responses, reporting limits were not identified for the data relevant to the IHLC property.*

3. Were specified protocol followed for sample containers/volumes, preservation methods, and holding times?

   Yes, specified protocol were followed for sample containers/volumes, preservation methods, and holding times. With the exception noted in Question No. 1, all data collected for the IHLC assessment areas were collected in accordance with U.S. EPA-approved RFI Work Plan and QAPjP. Variances in QA/QC procedures outlined in the approved QAPjP would have been identified within the applicable SAPs and subsequent RFI Phase I and Phase II Reports. The SAPs for the investigation areas as they apply to the IHLC property have been approved by the U.S. EPA. Further, the U.S. EPA has approved the subsequent Phase I RFI (Screening) Reports for SWMAs 2 and 3. Although the Final RFI Phase II Report for the IHE facility has not yet been submitted, based on a review of the Phase II RFI FPA, ISA, and FIA (data only) Reports and subsequent U.S. EPA comments and ArcelorMittal responses, concerns associated sample containers/volumes, preservation methods, and holding times were not identified by the U.S. EPA for the data relevant to the IHLC property.

4. Were specified field and laboratory QC samples collected/analyzed?

   Yes, specified field and laboratory QC samples were collected/analyzed. With the exception noted in Question No. 1, all data collected for the IHLC assessment areas were collected in accordance with U.S. EPA-approved RFI Work Plan and QAPjP. Variances in QA/QC procedures outlined in the approved QAPjP would have been identified within the applicable SAPs and subsequent RFI Phase I and Phase II Reports. The SAPs for the investigation areas as they apply to the IHLC property have been approved by the U.S. EPA. Further, U.S. EPA has approved the subsequent Phase I RFI (Screening) Reports for SWMAs 2 and 3. Although the Final RFI Phase II Report for the IHE facility has not yet been submitted, based on a review of the Phase II RFI FPA, ISA, and FIA (data only) Reports and subsequent U.S. EPA comments and ArcelorMittal responses, concerns associated the omittance of field and laboratory QC samples were not identified by the U.S. EPA for the data relevant to the IHLC property.

5. Was a third-party data validation performed?

   Data Validation was completed in accordance with the U.S. EPA approved QAPjP. With the exception noted in Question No. 1, all data collected for the IHLC assessment areas were collected in accordance with U.S. EPA-approved RFI Work Plan and QAPjP. Variances in QA/QC procedures outlined in the approved QAPjP would have been identified within the applicable SAPs and subsequent RFI Phase I and Phase II Reports. The SAPs for the investigation areas as they apply to the IHLC property have been approved by the U.S. EPA. Further, U.S. EPA has approved the subsequent Phase I RFI (Screening) Reports for SWMAs 2 and 3. Although the Final RFI Phase II Report for the IHE facility has not yet been submitted, based on a review of the Phase II RFI FPA, ISA, and FIA (data only) Reports and subsequent U.S. EPA comments and ArcelorMittal responses, concerns associated the omittance of a third-party data validation were not identified by the U.S.EPA for the data relevant to the IHLC property.

6. If there are SAP/ QAjPP deviations, how did these affect specified PARCC[1] goals?

   Based on a review of the Phase I and Phase II RFI Reports and subsequent U.S. EPA comments and ArcelorMittal responses, no effects on the PARCC goals were identified as a result of deviations, if determined, associated with the SAPs and QAPjP.

7. Were confirmation samples collected to verify field screening or mobile laboratory results?

   Based on a review of the Phase I and Phase II RFI Reports and subsequent U.S. EPA comments and ArcelorMittal responses, the omittance of required confirmation samples, if applicable, was not identified.

8. Are there any biased high/low results that may affect interpretation of data?

   Based on a review of the Phase I and Phase II RFI Reports and subsequent U.S. EPA comments and ArcelorMittal responses, concerns associated with biased high/low results and the potential effect on data interpretation were not identified.

9. How were data outliers or non-detect values handled?

[1] Precision, Accuracy, Representativeness, Completeness, Compatibility

Data outliers or non-detect values would be handled in accordance with the U.S. EPA approved RFI Work Plan and QAPjP. Variances in QA/QC procedures outlined in the approved RFI Work Plan and QAPjP would have been identified the RFI Phase I and Phase II Reports. The U.S. EPA has approved the Phase I RFI (Screening) Reports for SWMAs 2 and 3. Although the Final RFI Phase II Report for the IHE facility has not yet been submitted, based on a review of the Phase II RFI FPA, ISA, and FIA (data only) Reports and subsequent U.S. EPA comments and ArcelorMittal responses, no concerns associated the handling of data outliers and non-detects were identified for the IHLC property.

10. Were RFI objectives accomplished?

    The objective of the RFI is to determine the nature and extent of releases of hazardous waste or hazardous constituents from regulated units, SWMAs, USTs, and other source areas within SWMAs at the facility, and to gather necessary data to support the CMS or similar elements of the Corrective Action Program. Based on the review of the Phase I RFI and Phase II RFI findings, summarized herein, the RFI objectives for the IHLC property have been accomplished.

11. Was sampling performed in each medium impacted or potentially impacted?

    Based on a review of the Phase I and Phase II RFI Reports and subsequent U.S. EPA comments and ArcelorMittal responses, no concerns were communicated by the U.S. EPA related to insufficient sampling of impacted or potentially impacted media at the IHLC property.

12. Was spatial/temporal variability assessed?

    Spatial and temporal variability were assessed in accordance with the U.S. EPA-approved RFI Work Plan and QAPjP and SAPs. Variances in QA/QC procedures outlined in the approved QAPjP and SAPs would have been identified the RFI Phase I and Phase II Reports. The U.S. EPA has approved the Phase I RFI Reports for SWMAs 2 and 3. Although the Final RFI Phase II Report for the IHE facility has not yet been submitted, based on a review of the Phase II RFI FPA, ISA, and FIA (data only) Reports and subsequent U.S. EPA comments, no concerns associated with spatial or temporal variability were identified for the IHLC property.

13. Have all COCs been fully assessed in each impacted medium?

    Based on a review of the Phase I and Phase II RFI Reports and subsequent U.S. EPA comments and ArcelorMittal responses, no concerns associated with insufficient sampling of COCs were expressed by the U.S. EPA for the IHLC property. Further, based on the information presented herein, COCs appear to have been fully assessed.

14. Has the extent of contamination in each affected medium been reasonably bounded to facilitate risk-management decisions?

    Based on a review of the Phase I and Phase II RFI Reports and subsequent U.S. EPA comments and ArcelorMittal responses, no concerns were communicated by the U.S. EPA related to insufficient sampling of impacted or potentially impacted media. Further, based on the

information presented herein, the extent of contamination has been reasonably bounded at the IHLC property.

15. Is contamination stable (i.e., not significantly increasing in concentration or extent)?

    Based on the review of the Phase I RFI and Phase II RFI findings, summarized herein, the remaining impacts in on-site groundwater do not appear to be increasing in extent or in concentration.

5. Conclusion

As discussed and demonstrated in the sections above, the data collected at the IHLC property are sufficient to:

- Properly characterize the IHLC property;
- Develop a CSM for the IHLC property that describes contaminant fate and transport, identifies current and potential human and ecological receptors, exposure pathways and site risks;
- Meet the project/RCRA CA DQOs outlined in the QAPjP; and
- Assess risks to human health and the environment at the IHLC property.

Based on above, the data are sufficient to proceed to the next step in the RCRA CA process and to move the IHLC property towards RCRA CA complete status.

References

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TABLES

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	Groundwater to Surface Water Discharge Exposure Pathway				Industrial/Commercial Exposure to													
	Human Receptors		Ecological Receptors	Wildlife	Tier1A[4]													
	Tier 1A Carcinogen[1]	Tier 1A Non-Carcinogen[1]	Tier1A[2]	Tier1A[3]	Carcinogen	Non-Carcinogen	Tier 1B[6] Human Screening Criteria	Tier 1B[6] Non-Default Human Screening	Tier 1B[6] Ecological Screening Criteria	IFW-02-00001 4/28/1998 Primary	IFW-02-00002 4/24/1998 Primary	IFW-02-00003 IMW-02-00003 5/1/1998 Duplicate	IFW-02-00003 IMW-02-00003 5/1/1998 Primary	IFW-02-00004 4/22/1998 Primary	IFW-02-00005 4/28/1998 Primary	IFW-02-00006 4/21/1998 Primary	IFW-02-00007 4/21/1998 Primary	IFW-02-00008 4/21/1998 Primary
Inorganic Compounds (ug/L)																		
Antimony, Total	-	2000	80	-	-	41	-	-	-	-	-	ND (250)	ND (250)	-	-	-	-	-
Arsenic, Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic, Total	-	230	147.9	-	1.9	-	2300	-	-	-	-	ND (5)	ND (5)	-	-	-	-	-
Barium, Total	-	1000	1001.11 (IHSC)	-	-	20000	-	-	-	-	-	**88**	**87**	-	-	-	-	-
Beryllium, Total	-	300	17.10 (IHSC)	-	-	200	-	-	-	-	-	ND (3)	ND (3)	-	-	-	-	-
Cadmium, Total	-	1400	4.54 (IHSC)	-	-	51	-	-	-	-	-	ND (10)	ND (10)	-	-	-	-	-
Chromium, Total	-	25000 [5]	10.98 [5]	-	-	310 [5]	-	-	-	-	-	ND (50)	ND (50)	-	-	-	-	-
Cobalt, Total	-	-	19	-	-	-	-	-	-	-	-	ND (50)	ND (50)	-	-	-	-	-
Copper, Total	-	56000	18.14 (IHSC)	-	-	4100	-	-	-	-	-	ND (50)	ND (50)	-	-	-	-	-
Cyanide	-	48000	5.2	-	-	2000	480000	-	52	-	-	-	-	-	-	-	-	-
Iron, Total	-	300	1000	-	-	-	3000	135000	10000	-	-	**895** [B]	**870** [B]	-	-	-	-	-
Lead, Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead, Total	-	-	17.29 (IHSC)	-	-	42	-	-	-	-	-	ND (5)	ND (5)	-	-	-	-	-
Magnesium, Total	-	-	-	-	-	-	-	-	-	-	-	**28300**	**27500**	-	-	-	-	-
Manganese, Total	-	50	1048.1 (IHSC)	-	-	2450	500	22500	10481	-	-	**514** [BG]	**501** [BG]	-	-	-	-	-
Mercury, Total	-	0.0018	0.9081	0.0013	-	31	-	-	-	-	-	ND (0.5)	ND (0.5)	-	-	-	-	-
Nickel, Total	-	42000	100.76 (IHSC)	-	-	2000	-	-	-	-	-	ND (50)	ND (50)	-	-	-	-	-
Selenium, Total	-	3400	5	-	-	510	-	-	-	-	-	ND (5)	ND (5)	-	-	-	-	-
Silver, Total	-	26000	0.12	-	-	510	-	-	-	-	-	ND (50)	ND (50)	-	-	-	-	-
Sodium, Total	-	-	-	-	-	-	-	-	-	-	-	**80600**	**79500**	-	-	-	-	-
Thallium, Total	-	5	6	-	-	7.2	-	-	-	-	-	ND (2) J	ND (2) J	-	-	-	-	-
Tin, Total	-	-	180	-	12000	-	-	-	-	-	-	ND (50)	ND (50)	-	-	-	-	-
Vanadium, Total	-	2300	12	-	86	-	-	-	-	-	-	ND (50)	ND (50)	-	-	-	-	-
Zinc, Total	-	250000	231.67 (IHSC)	-		31000	-	-	-	-	-	ND (30)	ND (30)	-	-	-	-	-
Other (ug/L)																		
Ammonia (as N)	-	-	2065 (IHSC)	-	-	-	-	-	20650	-	-	-	-	-	-	-	-	-
Chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness as CaCO3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH (lab) (pH units)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Dissolved Solids (TDS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total phenols	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids (TSS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PCBs (ug/L)																		
4,4'-DDD	0.0031	-	0.032	0.000011	12	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4'-DDT	0.00015	0.002	0.032	0.000011	8.4	-	-	-	-	-	-	-	-	-	-	-	-	-
alpha-BHC	0.026	-	12.4	-	0.45	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1016 (PCB-1016)	0.0000068	-	0.014	0.00012	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	0.0000068	-	0.014	0.00012	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	0.0000068	-	0.014	0.00012	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-
delta-BHC	-	0.5	667	-	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-
Endosulfan	-	170	0.05	-	-	510	-	-	-	-	-	-	-	-	-	-	-	-
Endrin	-	0.193	0.036	-		31	-	-	-	-	-	-	-	-	-	-	-	-
Endrin ketone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
gamma-BHC (Lindane)	-	0.5	0.11	-	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-
Heptachlor	0.0016	0.29	0.0038	-	0.31	-	-	-	-	-	-	-	-	-	-	-	-	-
Heptachlor epoxide	0.00039	-	0.0038	-	0.31	-	-	-	-	-	-	-	-	-	-	-	-	-
Semi-Volatile Organic Compounds (ug/L)																		
1,2,4,5-Tetrachlorobenzene	-	0.36	8.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	-	35	30	-	-	1000	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	-	6000	14	-	-	9200	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Diphenylhydrazine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3,5-Trinitrobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	-	320	52	-	-	310	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dinitrobenzene	-	-	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	-	63	16	-	120	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Naphthoquinone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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	Tier 1A Carcinogen[1]	Tier 1A Non-Carcinogen[1]	Tier1A[2]	Tier1A[3]	Carcinogen	Non-Carcinogen												
1-Naphthylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2'-oxybis(1-Chloropropane)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,6-Tetrachlorophenol	-	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	-	2500	1.9	-	-	10000	-	-	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	200	-	1.4	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	-	450	17	-	-	310	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	-	8700	21	-	-	2000	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	-	2800	19	-	-	200	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	1.1	-	44	-	4.2	-	-	-	-	-	-	-	-	-	-	-	-	-
2,6-Dichlorophenol	-	450	-	-	-	310	-	-	-	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	-	-	81	-	4.2	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Acetylaminofluorene	-	-	535	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	-	1000	0.396	-	-	8200	-	-	-	-	-	-	-	-	-	-	-	-
2-Chlorophenol	-	81	24	-	-	510	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	-	-	330	-	-	410	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylphenol (o-Cresol)	-	44000	67	-	-	5100	-	-	-	-	-	-	-	-	-	-	-	-
2-Naphthylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Nitroaniline	-	-	-	-	-	310	-	-	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	-	-	73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Picoline	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Toluidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	0.95	-	4.5	-	6.4	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3-Dimethylbenzidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Methylcholanthrene	-	-	0.0891	-	0.13	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Methylphenol	-	44000	67	-	-	5100	-	-	-	-	-	-	-	-	-	-	-	-
3-Nitroaniline	-	-	-	-	-	310	-	-	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	-	13	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Aminobiphenyl	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Bromophenyl phenyl ether	-	-	1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	-	3000	34.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	-	-	232	-	-	410	-	-	-	-	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	-	44000	53	-	-	510	-	-	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	-	-	-	-	-	310	-	-	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	-	-	58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Nitroquinoline-N-oxide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-Nitro-2-Toluidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7,12-Dimethylbenz(a)anthracene	-	-	-	0.548	-	-	-	-	-	-	-	-	-	-	-	-	-	-
a,a-Dimethylphenethylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	-	4200	27	-	-	4200	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	-	-	4840	-	-	730	-	-	-	-	-	-	-	-	-	-	-	-
Acetophenone	-	-	-	-	-	10200	-	-	-	-	-	-	-	-	-	-	-	-
Aniline	-	-	4.1	-	130	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene	-	630	0.68	-	-	43	-	-	-	-	-	-	-	-	-	-	-	-
Aramite	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzidine	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	0.038	-	0.025	-	3.9	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	0.096	-	0.014	-	0.039	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	0.038	-	9.07	-	1.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	-	-	7.64	-	0.26	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	0.038	-	-	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzoic acid	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzyl Alcohol	-	-	8.6	-	-	31000	-	-	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	0.3	-	19000	-	2.6	-	-	-	-	-	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate**	2.8	60	0.3	-	200	-	28	700	3	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate	-	1500	23	-	-	2700	-	-	-	-	-	-	-	-	-	-	-	-
Carbazole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzilate	-	-	7.16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	0.038	-	-	-	1.6	-	-	-	-	-	-	-	-	-	-	-	-	-
Diallate	-	-	-	-	5.4	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	0.038	-	-	-	0.039	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	-	-	7.3	-	-	200	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	Groundwater to Surface Water Discharge Exposure Pathway				Industrial/Commercial Exposure to													
	Human Receptors		Ecological Receptors	Wildlife	Tier1A[4]		Tier 1B[6] Human Screening Criteria	Tier 1B[6] Non-Default Human Screening	Tier 1B[6] Ecological Screening Criteria	IFW-02-00001 4/28/1998 Primary	IFW-02-00002 4/24/1998 Primary	IFW-02-00003 IMW-02-00003 5/1/1998 Duplicate	IFW-02-00003 IMW-02-00003 5/1/1998 Primary	IFW-02-00004 4/22/1998 Primary	IFW-02-00005 4/28/1998 Primary	IFW-02-00006 4/21/1998 Primary	IFW-02-00007 4/21/1998 Primary	IFW-02-00008 4/21/1998 Primary
	Tier 1A Carcinogen[1]	Tier 1A Non-Carcinogen[1]	Tier1A[2]	Tier1A[3]	Carcinogen	Non-Carcinogen												
Diethyl phthalate	-	1200000	110	-	-	82000	-	-	-	-	-	-	-	-	-	-	-	-
Dimethoate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	-	270000	1000	-	-	1000000	-	-	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate	-	31	19	-	-	10000	-	-	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate	-	-	30	-	-	20	-	-	-	-	-	-	-	-	-	-	-	-
Dinoseb	-	69	0.48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diphenylamine	-	-	412	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Disulfoton	-	-	0.0402	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethyl methanesulfonate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Famphur	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	-	9.5	3.6	-	-	210	-	-	-	-	-	-	-	-	-	-	-	-
Fluorene	-	320	2.4	-	-	2000	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	0.00045	0.046	0.0003	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	0.24	-	0.053	-	-	31	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	-	1500	77	-	-	610	-	-	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	6.7	7.6	8	-	-	100	-	-	-	-	-	-	-	-	-	-	-	-
Hexachloropropene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	0.038	-	4.31	-	0.022	-	-	-	-	-	-	-	-	-	-	-	-	-
Isophorone	-	110000	830	-	3000	-	-	-	-	-	-	-	-	-	-	-	-	-
Isosafrole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methapyrilene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl methanesulfonate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	-	1900	26	-	-	2000	-	-	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	-	28000	220	-	-	51	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiethylamine	0.18	-	768	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodimethylamine	0.55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-N-butylamine	0.73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	2.9	-	-	-	0.41	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	74	-	25	-	580	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosomethylethylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosomorpholine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosopiperidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosopyrrolidine	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
o,o,o-Triethylphosphorothioate	-	-	58.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P-DIMETHYLAMINOAZOBENZENE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachlorobenzene	-	0.18	3.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachloronitrobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	84	24000	1130.56 (IHSC)	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenacetin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	-	-	0.93	-	-	310	-	-	-	-	-	-	-	-	-	-	-	-
Phenol	-	2300	180	-	5800	3100	-	-	-	-	-	-	-	-	-	-	-	-
Phorate	-	-	3.62	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-
p-Phenylenediamine	-	-	-	-	3800	-	-	-	-	-	-	-	-	-	-	-	-	-
Pronamide	-	-	-	-	1200	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene	-	15	0.3	-	-	140	-	-	-	-	-	-	-	-	-	-	-	-
Pyridine	-	-	2380	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Safrole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfotep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thionazin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Volatile Organic Compounds (ug/L)																		
1,1,1,2-Tetrachloroethane	-	-	-	-	110	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	-	-	410	-	-	29000	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	17	-	100	-	14	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	-	3000	87	-	50	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	-	27000	740	-	-	10000	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	-	4100	210	-	-	5100	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichloropropane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane (DBCP)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane (Ethylene Dibromide)	0.17	-	-	-	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	210	-	980	-	31	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethene (total)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	5	-	360	-	42	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	Groundwater to Surface Water Discharge Exposure Pathway				Industrial/Commercial Exposure to													
	Human Receptors		Ecological Receptors	Wildlife	Tier1A[4]													
	Tier 1A Carcinogen[1]	Tier 1A Non-Carcinogen[1]	Tier1A[2]	Tier1A[3]	Carcinogen	Non-Carcinogen	Tier 1B[6] Human Screening Criteria	Tier 1B[6] Non-Default Human Screening	Tier 1B[6] Ecological Screening Criteria	IFW-02-00001 4/28/1998 Primary	IFW-02-00002 4/24/1998 Primary	IFW-02-00003 IMW-02-00003 5/1/1998 Duplicate	IFW-02-00003 IMW-02-00003 5/1/1998 Primary	IFW-02-00004 4/22/1998 Primary	IFW-02-00005 4/28/1998 Primary	IFW-02-00006 4/21/1998 Primary	IFW-02-00007 4/21/1998 Primary	IFW-02-00008 4/21/1998 Primary
1,4-Dioxane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Butanone (Methyl Ethyl Ketone)	-	1300	14000	-	-	61000	-	-	-	-	-	-	-	-	-	-	-	-
2-Chloroethyl vinyl ether	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	-	-	99	-	-	6100	-	-	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	-	-	170	-	-	8200	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	-	220000	1700	-	-	92000	-	-	-	-	-	-	-	-	-	-	-	-
Acetonitrile	-	-	12000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acrolein	-	190	0.19	-	-	51	-	-	-	-	-	-	-	-	-	-	-	-
Acrylonitrile	3	-	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Allyl chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	310	510	98	-	52	-	-	-	-	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)
Bromodichloromethane	150	13000	-	-	46	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	710	8100	61	-	360	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane (Methyl Bromide)	-		16	-	-	140	-	-	-	-	-	-	-	-	-	-	-	-
Carbon disulfide	-	100000	15	-	-	16000	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	19	120	40	-	22	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	-	3200	47	-	-	2000	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	-	-	-	-	990	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform (Trichloromethane)	1700	11000	170	-	80	1000	-	-	-	-	-	-	-	-	-	-	-	-
Chloromethane (Methyl Chloride)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroprene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	-	-	620	-	-	1000	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,3-Dichloropropene	170	46000	1.9	-	29	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	86	12000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromomethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane (CFC-12)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethyl methacrylate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	-	9100	110	-	-	10000	-	-	-	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)
Iodomethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isobutyl alcohol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acrylonitrile	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl methacrylate	-	-	2800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylene chloride	2600	90000	1500	-	380	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	-	1900	26	-	-	2000	-	-	-	ND (17)	ND (17) J	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)
Propionitrile (Ethyl cyanide)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	-	32000	32	-	-	20000	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	60	1700	60	-	55	-	-	-	-	ND (16)	ND (16)	ND (16)	ND (16)	ND (16)	ND (16) J	ND (16)	ND (16)	ND (16)
Toluene	-	51000	94	-	-	8200	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
trans-1,2-Dichloroethene	-	25000	560	-	-	2000	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,3-Dichloropropene	170	46000	1.9	-	29	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,4-Dichloro-2-butene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	370	-	260	-	-	31	-	-	-	ND (15)	ND (15)	ND (15)	ND (15)	ND (15)	ND (15)	ND (15)	ND (15)	ND (15)
Trichlorofluoromethane (CFC-11)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl acetate	-	-	248	-	-	100000	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	14	4900	930	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylene (total)	-	150000	35	-	-	20000	-	-	-	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)

Notes and abbreviations on last page

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	IFW-02-00009	IFW-02-00010	IFW-02-00011	IFW-02-00012	IFW-02-00012	IFW-02-00013	IFW-02-00014	IFW-02-00015	IFW-02-00016	IFW-02-00017	IFW-02-00018 IMW-02-00001	IFW-02-00019	IFW-02-00020	IFW-02-00021	IFW-02-00022	IFW-02-00023	IFW-02-00024
	4/14/1998 Primary	4/24/1998 Primary	4/15/1998 Primary	4/23/1998 Duplicate	4/23/1998 Primary	5/6/1998 Primary	4/23/1998 Primary	4/17/1998 Primary	4/15/1998 Primary	4/14/1998 Primary	4/29/1998 Primary	4/10/1998 Primary	4/29/1998 Primary	4/23/1998 Primary	4/21/1998 Primary	9/28/1998 Primary	9/29/1998 Primary
Inorganic Compounds (ug/L)																	
Antimony, Total	-	-	-	-	-	-	-	-	-	-	ND (250)	-	ND (250)	-	-	-	-
Arsenic, Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic, Total	-	-	-	-	-	-	-	-	-	-	ND (5)	-	-	-	-	-	-
Barium, Total	-	-	-	-	-	-	-	-	-	-	**107 J**	-	-	-	-	-	-
Beryllium, Total	-	-	-	-	-	-	-	-	-	-	ND (3)	-	ND (3)	-	-	-	-
Cadmium, Total	-	-	-	-	-	-	-	-	-	-	ND (10)	-	-	-	-	-	-
Chromium, Total	-	-	-	-	-	-	-	-	-	-	ND (50) J	-	ND (50) J	-	-	-	-
Cobalt, Total	-	-	-	-	-	-	-	-	-	-	ND (50)	-	-	-	-	-	-
Copper, Total	-	-	-	-	-	-	-	-	-	-	ND (50) J	-	ND (50) J	-	-	-	-
Cyanide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron, Total	-	-	-	-	-	-	-	-	-	-	**24600 J** [BC]	-	-	-	-	-	-
Lead, Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead, Total	-	-	-	-	-	-	-	-	-	-	ND (5)	-	ND (5)	-	-	-	-
Magnesium, Total	-	-	-	-	-	-	-	-	-	-	**46500**	-	**43000**	-	-	-	-
Manganese, Total	-	-	-	-	-	-	-	-	-	-	**378** [B]	-	-	-	-	-	-
Mercury, Total	-	-	-	-	-	-	-	-	-	-	ND (0.5)	-	-	-	-	-	-
Nickel, Total	-	-	-	-	-	-	-	-	-	-	ND (50)	-	ND (50)	-	-	-	-
Selenium, Total	-	-	-	-	-	-	-	-	-	-	ND (5)	-	ND (5)	-	-	-	-
Silver, Total	-	-	-	-	-	-	-	-	-	-	ND (50)	-	-	-	-	-	-
Sodium, Total	-	-	-	-	-	-	-	-	-	-	**70000**	-	**24500**	-	-	-	-
Thallium, Total	-	-	-	-	-	-	-	-	-	-	ND (2)	-	-	-	-	-	-
Tin, Total	-	-	-	-	-	-	-	-	-	-	ND (50)	-	-	-	-	-	-
Vanadium, Total	-	-	-	-	-	-	-	-	-	-	ND (50)	-	-	-	-	-	-
Zinc, Total	-	-	-	-	-	-	-	-	-	-	**32**	-	ND (30)	-	-	-	-
Other (ug/L)																	
Ammonia (as N)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness as CaCO3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH (lab) (pH units)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Dissolved Solids (TDS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total phenols	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids (TSS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PCBs (ug/L)																	
4,4'-DDD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4'-DDT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
alpha-BHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
delta-BHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endosulfan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endrin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endrin ketone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
gamma-BHC (Lindane)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heptachlor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heptachlor epoxide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Semi-Volatile Organic Compounds (ug/L)																	
1,2,4,5-Tetrachlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Diphenylhydrazine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3,5-Trinitrobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dinitrobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Naphthoquinone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	IFW-02-00009	IFW-02-00010	IFW-02-00011	IFW-02-00012	IFW-02-00012	IFW-02-00013	IFW-02-00014	IFW-02-00015	IFW-02-00016	IFW-02-00017	IFW-02-00018 IMW-02-00001	IFW-02-00019	IFW-02-00020	IFW-02-00021	IFW-02-00022	IFW-02-00023	IFW-02-00024
	4/14/1998 Primary	4/24/1998 Primary	4/15/1998 Primary	4/23/1998 Duplicate	4/23/1998 Primary	5/6/1998 Primary	4/23/1998 Primary	4/17/1998 Primary	4/15/1998 Primary	4/14/1998 Primary	4/29/1998 Primary	4/10/1998 Primary	4/29/1998 Primary	4/23/1998 Primary	4/21/1998 Primary	9/28/1998 Primary	9/29/1998 Primary
1-Naphthylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2'-oxybis(1-Chloropropane)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,6-Tetrachlorophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,6-Dichlorophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Acetylaminofluorene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Chlorophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylphenol (o-Cresol)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Naphthylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Nitroaniline	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Picoline	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Toluidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3-Dimethylbenzidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Methylcholanthrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Methylphenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Nitroaniline	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Aminobiphenyl	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Bromophenyl phenyl ether	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Nitroquinoline-N-oxide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-Nitro-2-Toluidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7,12-Dimethylbenz(a)anthracene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
a,a-Dimethylphenethylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetophenone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aniline	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aramite	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzyl Alcohol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbazole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzilate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diallate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	IFW-02-00009	IFW-02-00010	IFW-02-00011	IFW-02-00012	IFW-02-00012	IFW-02-00013	IFW-02-00014	IFW-02-00015	IFW-02-00016	IFW-02-00017	IFW-02-00018 IMW-02-00001	IFW-02-00019	IFW-02-00020	IFW-02-00021	IFW-02-00022	IFW-02-00023	IFW-02-00024
	4/14/1998 Primary	4/24/1998 Primary	4/15/1998 Primary	4/23/1998 Duplicate	4/23/1998 Primary	5/6/1998 Primary	4/23/1998 Primary	4/17/1998 Primary	4/15/1998 Primary	4/14/1998 Primary	4/29/1998 Primary	4/10/1998 Primary	4/29/1998 Primary	4/23/1998 Primary	4/21/1998 Primary	9/28/1998 Primary	9/29/1998 Primary
Diethyl phthalate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dimethoate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dinoseb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diphenylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Disulfoton	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethyl methanesulfonate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Famphur	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluorene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexachloropropene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isophorone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isosafrole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methapyrilene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl methanesulfonate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiethylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodimethylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-N-butylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosomethylethylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosomorpholine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosopiperidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosopyrrolidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
o,o,o-Triethylphosphorothioate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P-DIMETHYLAMINOAZOBENZENE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachloronitrobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenacetin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phorate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
p-Phenylenediamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pronamide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyridine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Safrole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfotep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thionazin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Volatile Organic Compounds (ug/L)																	
1,1,1,2-Tetrachloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichloropropane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane (DBCP)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane (Ethylene Dibromide)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethene (total)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	IFW-02-00009	IFW-02-00010	IFW-02-00011	IFW-02-00012	IFW-02-00012	IFW-02-00013	IFW-02-00014	IFW-02-00015	IFW-02-00016	IFW-02-00017	IFW-02-00018 IMW-02-00001	IFW-02-00019	IFW-02-00020	IFW-02-00021	IFW-02-00022	IFW-02-00023	IFW-02-00024
	4/14/1998 Primary	4/24/1998 Primary	4/15/1998 Primary	4/23/1998 Duplicate	4/23/1998 Primary	5/6/1998 Primary	4/23/1998 Primary	4/17/1998 Primary	4/15/1998 Primary	4/14/1998 Primary	4/29/1998 Primary	4/10/1998 Primary	4/29/1998 Primary	4/23/1998 Primary	4/21/1998 Primary	9/28/1998 Primary	9/29/1998 Primary
1,4-Dioxane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Butanone (Methyl Ethyl Ketone)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Chloroethyl vinyl ether	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetonitrile	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acrolein	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acrylonitrile	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Allyl chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)
Bromodichloromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane (Methyl Bromide)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon disulfide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform (Trichloromethane)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloromethane (Methyl Chloride)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroprene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromomethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane (CFC-12)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethyl methacrylate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)
Iodomethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isobutyl alcohol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acrylonitrile	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl methacrylate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylene chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17) J	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	**72.7** [C]	ND (17)	ND (17)
Propionitrile (Ethyl cyanide)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	ND (16)	ND (16)	ND (16)	ND (16)	ND (16)	**127** [ACE]	ND (16)	ND (16)	ND (16)	ND (16)	ND (16)	ND (16)	ND (16)	ND (16)	ND (16)	**187** [ACE]	ND (16)
Toluene	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,4-Dichloro-2-butene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	ND (15)	ND (15)	ND (15)	ND (15)	ND (15)	ND (15) J	ND (15) J	ND (15) J	ND (15) J	ND (15) J	ND (15) J	ND (15)	ND (15)	ND (15)	ND (15)	**44.5** [F]	ND (15)
Trichlorofluoromethane (CFC-11)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl acetate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylene (total)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)

Notes and abbreviations on last page

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	IFW-02-00025	IFW-03-00001	IFW-03-00002	IFW-03-00004	IFW-03-00008	IFW-03-00008	IFW-03-00008	IFW-03-00008	IFW-03-00014	IFW-03-00015	IFW-03-00018	IFW-03-00019	IFW-03-00023	IFW-03-00029	IFW-03-00029	IFW-03-00029	IFW-03-00029A
	9/29/1998 Primary	7/9/1996 Primary	7/8/1996 Primary	7/10/1996 Primary	7/12/1996 Primary	8/12/1996 Primary	8/27/1996 Primary	9/3/1996 Primary	7/11/1996 Primary	7/9/1996 Primary	7/10/1996 Primary	7/8/1996 Primary	7/24/1996 Primary	7/22/1996 Primary	7/22/1996 Primary	8/26/1996 Primary	8/8/1996 Primary
Inorganic Compounds (ug/L)																	
Antimony, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic, Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead, Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thallium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other (ug/L)																	
Ammonia (as N)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness as CaCO3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH (lab) (pH units)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Dissolved Solids (TDS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total phenols	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids (TSS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PCBs (ug/L)																	
4,4'-DDD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4'-DDT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
alpha-BHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
delta-BHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endosulfan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endrin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endrin ketone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
gamma-BHC (Lindane)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heptachlor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heptachlor epoxide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Semi-Volatile Organic Compounds (ug/L)																	
1,2,4,5-Tetrachlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Diphenylhydrazine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3,5-Trinitrobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dinitrobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Naphthoquinone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	IFW-02-00025	IFW-03-00001	IFW-03-00002	IFW-03-00004	IFW-03-00008	IFW-03-00008	IFW-03-00008	IFW-03-00008	IFW-03-00014	IFW-03-00015	IFW-03-00018	IFW-03-00019	IFW-03-00023	IFW-03-00029	IFW-03-00029	IFW-03-00029	IFW-03-00029A
	9/29/1998 Primary	7/9/1996 Primary	7/8/1996 Primary	7/10/1996 Primary	7/12/1996 Primary	8/12/1996 Primary	8/27/1996 Primary	9/3/1996 Primary	7/11/1996 Primary	7/9/1996 Primary	7/10/1996 Primary	7/8/1996 Primary	7/24/1996 Primary	7/22/1996 Primary	7/22/1996 Primary	8/26/1996 Primary	8/8/1996 Primary
1-Naphthylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2'-oxybis(1-Chloropropane)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,6-Tetrachlorophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,6-Dichlorophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Acetylaminofluorene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Chlorophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylphenol (o-Cresol)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Naphthylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Nitroaniline	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Picoline	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Toluidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3-Dimethylbenzidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Methylcholanthrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Methylphenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Nitroaniline	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Aminobiphenyl	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Bromophenyl phenyl ether	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Nitroquinoline-N-oxide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-Nitro-2-Toluidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7,12-Dimethylbenz(a)anthracene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
a,a-Dimethylphenethylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetophenone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aniline	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aramite	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzyl Alcohol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbazole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzilate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diallate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	IFW-02-00025	IFW-03-00001	IFW-03-00002	IFW-03-00004	IFW-03-00008	IFW-03-00008	IFW-03-00008	IFW-03-00008	IFW-03-00014	IFW-03-00015	IFW-03-00018	IFW-03-00019	IFW-03-00023	IFW-03-00029	IFW-03-00029	IFW-03-00029	IFW-03-00029A
	9/29/1998 Primary	7/9/1996 Primary	7/8/1996 Primary	7/10/1996 Primary	7/12/1996 Primary	8/12/1996 Primary	8/27/1996 Primary	9/3/1996 Primary	7/11/1996 Primary	7/9/1996 Primary	7/10/1996 Primary	7/8/1996 Primary	7/24/1996 Primary	7/22/1996 Primary	7/22/1996 Primary	8/26/1996 Primary	8/8/1996 Primary
Diethyl phthalate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dimethoate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dinoseb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diphenylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Disulfoton	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethyl methanesulfonate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Famphur	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluorene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexachloropropene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isophorone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isosafrole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methapyrilene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl methanesulfonate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiethylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodimethylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-N-butylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosomethylethylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosomorpholine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosopiperidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosopyrrolidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
o,o,o-Triethylphosphorothioate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P-DIMETHYLAMINOAZOBENZENE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachloronitrobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenacetin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phorate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
p-Phenylenediamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pronamide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyridine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Safrole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfotep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thionazin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Volatile Organic Compounds (ug/L)																	
1,1,1,2-Tetrachloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichloropropane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane (DBCP)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane (Ethylene Dibromide)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethene (total)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	IFW-02-00025	IFW-03-00001	IFW-03-00002	IFW-03-00004	IFW-03-00008	IFW-03-00008	IFW-03-00008	IFW-03-00008	IFW-03-00014	IFW-03-00015	IFW-03-00018	IFW-03-00019	IFW-03-00023	IFW-03-00029	IFW-03-00029	IFW-03-00029	IFW-03-00029A
	9/29/1998 Primary	7/9/1996 Primary	7/8/1996 Primary	7/10/1996 Primary	7/12/1996 Primary	8/12/1996 Primary	8/27/1996 Primary	9/3/1996 Primary	7/11/1996 Primary	7/9/1996 Primary	7/10/1996 Primary	7/8/1996 Primary	7/24/1996 Primary	7/22/1996 Primary	7/22/1996 Primary	8/26/1996 Primary	8/8/1996 Primary
1,4-Dioxane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Butanone (Methyl Ethyl Ketone)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Chloroethyl vinyl ether	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetonitrile	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acrolein	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acrylonitrile	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Allyl chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	**1600** [ABCE]	**22**
Bromodichloromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane (Methyl Bromide)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon disulfide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform (Trichloromethane)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloromethane (Methyl Chloride)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroprene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromomethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane (CFC-12)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethyl methacrylate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)
Iodomethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isobutyl alcohol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acrylonitrile	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl methacrylate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylene chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	**23**	**23**	**28** [C]	ND (17)
Propionitrile (Ethyl cyanide)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	ND (16)	ND (16)	ND (16)	ND (16)	ND (16)	ND (16)	ND (16)	ND (16)	ND (16)	ND (16)	ND (16)	ND (16)	ND (16)	ND (16)	ND (16)	ND (16)	ND (16)
Toluene	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,4-Dichloro-2-butene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	ND (15)	ND (15)	ND (15)	ND (15)	ND (15)	ND (15)	ND (15)	ND (15)	ND (15)	ND (15)	ND (15)	ND (15)	ND (15)	ND (15)	ND (15)	ND (15)	ND (15)
Trichlorofluoromethane (CFC-11)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl acetate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylene (total)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)

Notes and abbreviations on last page

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	IFW-03-00029B	IFW-03-00029C	IFW-03-00029D	IFW-03-00029E	IFW-03-00031	IFW-03-00031	IFW-03-00032	IFW-03-00032	IFW-03-00038	IMW-02-00004D	IMW-02-00004D	IMW-02-00004S	IMW-02-00004S	IMW-03-00004	IMW-03-00004	IMW-03-00004
	8/8/1996 Primary	8/8/1996 Primary	8/9/1996 Primary	8/9/1996 Primary	7/30/1996 Primary	8/30/1996 Primary	8/6/1996 Primary	8/6/1996 Primary	9/3/1996 Primary	11/10/2008 Primary	6/10/2009 Primary	11/10/2008 Primary	6/10/2009 Primary	8/5/1996 Primary	8/6/1996 Primary	8/13/1996 Primary
Inorganic Compounds (ug/L)																
Antimony, Total	-	-	-	-	-	-	-	-	-	**4.8 JB**	ND (60)	**5.1 JB**	ND (60)	-	-	-
Arsenic, Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium, Total	-	-	-	-	-	-	-	-	-	**235**	**239**	**70.3 J**	**74.9 J**	-	-	-
Beryllium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium, Total	-	-	-	-	-	-	-	-	-	ND (5)	ND (5)	ND (5)	ND (5)	-	-	-
Chromium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt, Total	-	-	-	-	-	-	-	-	-	ND (50)	ND (50)	ND (50)	**2 J**	-	-	-
Copper, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
Iron, Total	-	-	-	-	-	-	-	-	-	**7550** [BC]	**7280** [BC]	**206**	**228**	-	-	-
Lead, Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium, Total	-	-	-	-	-	-	-	-	-	**54600**	**58100**	**22600**	**25300**	-	-	-
Manganese, Total	-	-	-	-	-	-	-	-	-	**84.4** [B]	**91.1** [B]	**474** [B]	**593** [B]	-	-	-
Mercury, Total	-	-	-	-	-	-	-	-	-	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	-	-	-
Nickel, Total	-	-	-	-	-	-	-	-	-	ND (40)	ND (40)	ND (40)	ND (40)	-	-	-
Selenium, Total	-	-	-	-	-	-	-	-	-	ND (5)	ND (5)	ND (5)	ND (5)	-	-	-
Silver, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium, Total	-	-	-	-	-	-	-	-	-	**46300**	**43800**	**92700**	**113000**	-	-	-
Thallium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium, Total	-	-	-	-	-	-	-	-	-	ND (50)	ND (50)	ND (50)	ND (50)	-	-	-
Zinc, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other (ug/L)																
Ammonia (as N)	-	-	-	-	-	-	-	-	-	**3100** [C]	**3600** [C]	**500**	**500**	-	-	-
Chloride	-	-	-	-	-	-	-	-	-	**54100**	**69800**	**151000**	**126000**	-	-	-
Hardness as CaCO3	-	-	-	-	-	-	-	-	-	**680000**	**780000**	**310000**	**330000**	-	-	-
pH (lab) (pH units)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	-	-	-	-	-	-	-	-	-	**347000**	**342000**	**148000**	**144000**	-	-	-
Sulfide	-	-	-	-	-	-	-	-	-	ND (1000)	**1100**	ND (1000)	ND (1000)	-	-	-
Total Dissolved Solids (TDS)	-	-	-	-	-	-	-	-	-	**980000**	**1000000**	**630000 J**	**720000**	-	-	-
Total phenols	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids (TSS)	-	-	-	-	-	-	-	-	-	**12000**	**21000**	ND (4000)	ND (4000)	-	-	-
PCBs (ug/L)																
4,4'-DDD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4'-DDT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
alpha-BHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
delta-BHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endosulfan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endrin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endrin ketone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
gamma-BHC (Lindane)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heptachlor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heptachlor epoxide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Semi-Volatile Organic Compounds (ug/L)																
1,2,4,5-Tetrachlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
1,2-Dichlorobenzene	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
1,2-Diphenylhydrazine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3,5-Trinitrobenzene	-	-	-	-	-	-	-	-	-	ND (50)	ND (50)	ND (50)	ND (50)	-	-	-
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dinitrobenzene	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
1,4-Dichlorobenzene	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
1,4-Naphthoquinone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	IFW-03-00029B	IFW-03-00029C	IFW-03-00029D	IFW-03-00029E	IFW-03-00031	IFW-03-00031	IFW-03-00032	IFW-03-00032	IFW-03-00038	IMW-02-00004D	IMW-02-00004D	IMW-02-00004S	IMW-02-00004S	IMW-03-00004	IMW-03-00004	IMW-03-00004
	8/8/1996 Primary	8/8/1996 Primary	8/9/1996 Primary	8/9/1996 Primary	7/30/1996 Primary	8/30/1996 Primary	8/6/1996 Primary	8/6/1996 Primary	9/3/1996 Primary	11/10/2008 Primary	6/10/2009 Primary	11/10/2008 Primary	6/10/2009 Primary	8/5/1996 Primary	8/6/1996 Primary	8/13/1996 Primary
1-Naphthylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2'-oxybis(1-Chloropropane)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,6-Tetrachlorophenol	-	-	-	-	-	-	-	-	-	ND (50)	ND (50)	ND (50)	ND (50)	-	-	-
2,4,5-Trichlorophenol	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
2,4,6-Trichlorophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	-	-	-	-	-	-	-	-	-	ND (50)	ND (50)	ND (50)	ND (50)	-	-	-
2,4-Dinitrotoluene	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
2,6-Dichlorophenol	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
2,6-Dinitrotoluene	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
2-Acetylaminofluorene	-	-	-	-	-	-	-	-	-	ND (100)	ND (100)	ND (100)	ND (100)	-	-	-
2-Chloronaphthalene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Chlorophenol	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
2-Methylnaphthalene	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
2-Methylphenol (o-Cresol)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Naphthylamine	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
2-Nitroaniline	-	-	-	-	-	-	-	-	-	ND (50)	ND (50)	ND (50)	ND (50)	-	-	-
2-Nitrophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Picoline	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Toluidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	-	-	-	-	-	-	-	-	-	ND (50)	ND (50)	ND (50)	ND (50)	-	-	-
3,3-Dimethylbenzidine	-	-	-	-	-	-	-	-	-	ND (50)	50 R	ND (50)	50 R	-	-	-
3-Methylcholanthrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Methylphenol	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10) J	ND (10)	-	-	-
3-Nitroaniline	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	-	-	-	-	-	-	-	-	-	ND (50)	ND (50)	ND (50)	ND (50)	-	-	-
4-Aminobiphenyl	-	-	-	-	-	-	-	-	-	ND (50)	ND (50)	ND (50)	ND (50)	-	-	-
4-Bromophenyl phenyl ether	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
4-Chloro-3-methylphenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	-	-	-	-	-	-	-	-	-	ND (50)	ND (50)	ND (50)	ND (50)	-	-	-
4-Nitrophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Nitroquinoline-N-oxide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-Nitro-2-Toluidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7,12-Dimethylbenz(a)anthracene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
a,a-Dimethylphenethylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
Acetophenone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aniline	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aramite	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
Benzo(a)pyrene	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
Benzo(b)fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzyl Alcohol	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
bis(2-Chloroethoxy)methane	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10) J	ND (10)	-	-	-
bis(2-Chloroethyl)ether	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbazole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzilate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diallate	-	-	-	-	-	-	-	-	-	10 R	ND (10)	10 R	ND (10)	-	-	-
Dibenz(a,h)anthracene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	IFW-03-00029B	IFW-03-00029C	IFW-03-00029D	IFW-03-00029E	IFW-03-00031	IFW-03-00031	IFW-03-00032	IFW-03-00032	IFW-03-00038	IMW-02-00004D	IMW-02-00004D	IMW-02-00004S	IMW-02-00004S	IMW-03-00004	IMW-03-00004	IMW-03-00004
	8/8/1996 Primary	8/8/1996 Primary	8/9/1996 Primary	8/9/1996 Primary	7/30/1996 Primary	8/30/1996 Primary	8/6/1996 Primary	8/6/1996 Primary	9/3/1996 Primary	11/10/2008 Primary	6/10/2009 Primary	11/10/2008 Primary	6/10/2009 Primary	8/5/1996 Primary	8/6/1996 Primary	8/13/1996 Primary
Diethyl phthalate	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
Dimethoate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
Di-n-butylphthalate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
Dinoseb	-	-	-	-	-	-	-	-	-	ND (20)	ND (20)	ND (20)	ND (20)	-	-	-
Diphenylamine	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
Disulfoton	-	-	-	-	-	-	-	-	-	ND (50)	ND (50)	ND (50)	ND (50)	-	-	-
Ethyl methanesulfonate	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
Famphur	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
Fluorene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-	-	ND (50)	ND (50)	ND (50)	ND (50)	-	-	-
Hexachloroethane	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
Hexachloropropene	-	-	-	-	-	-	-	-	-	ND (100)	ND (100)	ND (100)	ND (100)	-	-	-
Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
Isophorone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isosafrole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methapyrilene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl methanesulfonate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
N-Nitrosodiethylamine	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
N-Nitrosodimethylamine	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
N-Nitrosodi-N-butylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10) J	ND (10)	-	-	-
N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
N-Nitrosomethylethylamine	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
N-Nitrosomorpholine	-	-	-	-	-	-	-	-	-	ND (10) J	ND (10)	ND (10) J	ND (10)	-	-	-
N-Nitrosopiperidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosopyrrolidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
o,o,o-Triethylphosphorothioate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P-DIMETHYLAMINOAZOBENZENE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachloronitrobenzene	-	-	-	-	-	-	-	-	-	ND (50)	ND (50)	ND (50)	ND (50)	-	-	-
Pentachlorophenol	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
Phenacetin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
Phenol	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
Phorate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
p-Phenylenediamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pronamide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-
Pyridine	-	-	-	-	-	-	-	-	-	ND (20)	ND (20)	ND (20)	ND (20)	-	-	-
Safrole	-	-	-	-	-	-	-	-	-	ND (20)	ND (20)	ND (20)	ND (20)	-	-	-
Sulfotep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thionazin	-	-	-	-	-	-	-	-	-	ND (50)	ND (50)	ND (50)	ND (50)	-	-	-
Volatile Organic Compounds (ug/L)																
1,1,1,2-Tetrachloroethane	-	-	-	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-
1,1,1-Trichloroethane	-	-	-	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-
1,1,2,2-Tetrachloroethane	-	-	-	-	-	-	-	-	-	-	-	-	ND (1)	-	-	-
1,1,2-Trichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	ND (1)	-	-	-
1,1-Dichloroethane	-	-	-	-	-	-	-	-	-	-	-	**1.8**	**0.86 J**	-	-	-
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	ND (1)	ND (1)	**0.35 J**	-	-	-	-
1,2,3-Trichloropropane	-	-	-	-	-	-	-	-	-	ND (1)	ND (1)	ND (1)	-	-	-	-
1,2-Dibromo-3-chloropropane (DBCP)	-	-	-	-	-	-	-	-	-	-	-	-	ND (2)	-	-	-
1,2-Dibromoethane (Ethylene Dibromide)	-	-	-	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-
1,2-Dichloroethane	-	-	-	-	-	-	-	-	-	ND (1) J	ND (1)	-	ND (1)	-	-	-
1,2-Dichloroethene (total)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	-	-	-	-	-	-	-	-	-	-	-	-	ND (1)	-	-	-

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	8/8/1996 Primary	8/8/1996 Primary	8/9/1996 Primary	8/9/1996 Primary	7/30/1996 Primary	8/30/1996 Primary	8/6/1996 Primary	8/6/1996 Primary	9/3/1996 Primary	11/10/2008 Primary	6/10/2009 Primary	11/10/2008 Primary	6/10/2009 Primary	8/5/1996 Primary	8/6/1996 Primary	8/13/1996 Primary
1,4-Dioxane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Butanone (Methyl Ethyl Ketone)	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	-	-	-	-
2-Chloroethyl vinyl ether	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	-	ND (10)	-	-	-
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	-	ND (10)	-	-	-
Acetone	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	-	ND (10)	-	-	-
Acetonitrile	-	-	-	-	-	-	-	-	-	ND (20)	ND (20)	ND (20)	-	-	-	-
Acrolein	-	-	-	-	-	-	-	-	-	ND (20)	ND (20)	-	ND (20)	-	-	-
Acrylonitrile	-	-	-	-	-	-	-	-	-	ND (20)	ND (20)	-	ND (20)	-	-	-
Allyl chloride	-	-	-	-	-	-	-	-	-	-	-	ND (2) J	-	-	-	-
Benzene	**20**	**9100** [ABCE]	ND (17)	**4600** [ABCE]	ND (17)	ND (17)	ND (17)	ND (17)	**300** [CE]	ND (1)	ND (1)	-	ND (1)	**5900** [ABCE]	**4700** [ABCE]	**1400** [ABCE]
Bromodichloromethane	-	-	-	-	-	-	-	-	-	ND (1) J	ND (1)	ND (1) J	-	-	-	-
Bromoform	-	-	-	-	-	-	-	-	-	-	-	-	ND (1) J	-	-	-
Bromomethane (Methyl Bromide)	-	-	-	-	-	-	-	-	-	ND (1) J	ND (1)	-	ND (1)	-	-	-
Carbon disulfide	-	-	-	-	-	-	-	-	-	ND (1)	ND (1)	ND (1)	-	-	-	-
Carbon tetrachloride	-	-	-	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-
Chlorobenzene	-	-	-	-	-	-	-	-	-	ND (1)	ND (1)	-	ND (1)	-	-	-
Chloroethane	-	-	-	-	-	-	-	-	-	ND (1) J	ND (1)	-	ND (1)	-	-	-
Chloroform (Trichloromethane)	-	-	-	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-
Chloromethane (Methyl Chloride)	-	-	-	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-
Chloroprene	-	-	-	-	-	-	-	-	-	ND (2)	ND (2)	-	ND (2)	-	-	-
cis-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	**230**	**280**	-	-	-
cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-	-	-	-	ND (1) J	-	-	-	-
Dibromochloromethane	-	-	-	-	-	-	-	-	-	ND (1)	ND (1) J	-	ND (1) J	-	-	-
Dibromomethane	-	-	-	-	-	-	-	-	-	-	-	ND (1) J	-	-	-	-
Dichlorodifluoromethane (CFC-12)	-	-	-	-	-	-	-	-	-	ND (1)	ND (1) J	ND (1)	-	-	-	-
Ethyl methacrylate	-	-	-	-	-	-	-	-	-	-	-	-	ND (1)	-	-	-
Ethylbenzene	ND (8.2)	**21**	ND (8.2)	**13**	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	ND (8.2)	-	-	ND (1)	-	**18**	**15**	**8.4**
Iodomethane	-	-	-	-	-	-	-	-	-	ND (1)	ND (1)	-	ND (1)	-	-	-
Isobutyl alcohol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acrylonitrile	-	-	-	-	-	-	-	-	-	-	-	ND (2)	-	-	-	-
Methyl methacrylate	-	-	-	-	-	-	-	-	-	ND (2)	2 R	ND (2)	-	-	-	-
Methylene chloride	-	-	-	-	-	-	-	-	-	-	-	-	ND (1)	-	-	-
Naphthalene	ND (17)	**28** [C]	ND (17)	**31** [C]	ND (17)	ND (17)	**35** [C]	**24**	ND (17)	-	-	-	-	**38** [C]	**22**	**21**
Propionitrile (Ethyl cyanide)	-	-	-	-	-	-	-	-	-	-	-	4 R	-	-	-	-
Styrene	-	-	-	-	-	-	-	-	-	ND (1)	ND (1)	-	ND (1)	-	-	-
Tetrachloroethene	ND (16)	-	ND (16)	ND (16)	ND (16)	ND (16)	ND (16)	ND (16)	ND (16)	-	-	**47 J**	**52**	ND (16)	ND (16)	ND (16)
Toluene	ND (10)	ND (10)	ND (10)	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	ND (1)	-	ND (10)	ND (10)	ND (10)
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	ND (0.5)	ND (0.5)	**10**	**8.3**	-	-	-
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	-	ND (1)	ND (1) J	-	ND (1) J	-	-	-
trans-1,4-Dichloro-2-butene	-	-	-	-	-	-	-	-	-	-	-	1 R	-	-	-	-
Trichloroethene	ND (15)	ND (15)	ND (15)	ND (15)	ND (15)	ND (15)	ND (15)	ND (15)	ND (15)	ND (1)	ND (1)	**12**	**11**	ND (15)	ND (15)	ND (15)
Trichlorofluoromethane (CFC-11)	-	-	-	-	-	-	-	-	-	-	-	-	ND (1)	-	-	-
Vinyl acetate	-	-	-	-	-	-	-	-	-	-	-	ND (2)	-	-	-	-
Vinyl chloride	-	-	-	-	-	-	-	-	-	-	-	**220** [AE]	**92** [AE]	-	-	-
Xylene (total)	ND (17)	ND (17)	ND (17)	-	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (1)	ND (1)	ND (1)	-	ND (17)	ND (17)	ND (17)

Notes and abbreviations on last page

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00007	IMW-03-00007A	IMW-03-00007B	IMW-03-00007	IMW-03-00007	IMW-03-00008D	IMW-03-00008D
	8/13/1996 Primary	9/23/2004 Primary	12/1/2004 Primary	1/27/2015 Primary	8/19/2015 Primary	1/20/2016 Primary	5/11/2016 Primary	10/12/2016 Primary	5/31/2017 Primary	8/8/1996 Primary	8/14/1996 Primary	8/14/1996 Primary	9/23/2004 Primary	12/1/2004 Primary	12/10/1999 Primary	10/19/2000 Primary
Inorganic Compounds (ug/L)																
Antimony, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic, Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead, Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thallium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other (ug/L)																
Ammonia (as N)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness as CaCO3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH (lab) (pH units)	-	**7.7**	-	-	-	-	-	-	-	-	-	**8.7**	-	-	-	-
Sulfate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Dissolved Solids (TDS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total phenols	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids (TSS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PCBs (ug/L)																
4,4'-DDD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4'-DDT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
alpha-BHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
delta-BHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endosulfan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endrin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endrin ketone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
gamma-BHC (Lindane)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heptachlor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heptachlor epoxide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Semi-Volatile Organic Compounds (ug/L)																
1,2,4,5-Tetrachlorobenzene	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	-	-
1,2,4-Trichlorobenzene	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	-	ND (10)
1,2-Dichlorobenzene	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	-	ND (10)
1,2-Diphenylhydrazine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3,5-Trinitrobenzene	-	ND (50)	ND (50)	-	-	-	-	-	-	-	-	-	ND (50)	-	-	-
1,3-Dichlorobenzene	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	ND (10)	-
1,3-Dinitrobenzene	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	-	-
1,4-Dichlorobenzene	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	ND (10)	-	-	ND (10)
1,4-Naphthoquinone	-	-	-	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	-	-	-	-	ND (50)	-	-

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00007	IMW-03-00007A	IMW-03-00007B	IMW-03-00007	IMW-03-00007	IMW-03-00008D	IMW-03-00008D
	8/13/1996 Primary	9/23/2004 Primary	12/1/2004 Primary	1/27/2015 Primary	8/19/2015 Primary	1/20/2016 Primary	5/11/2016 Primary	10/12/2016 Primary	5/31/2017 Primary	8/8/1996 Primary	8/14/1996 Primary	8/14/1996 Primary	9/23/2004 Primary	12/1/2004 Primary	12/10/1999 Primary	10/19/2000 Primary
1-Naphthylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2'-oxybis(1-Chloropropane)	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	-	ND (10)
2,3,4,6-Tetrachlorophenol	-	ND (50)	ND (50)	-	-	-	-	-	-	-	-	-	ND (50)	-	-	-
2,4,5-Trichlorophenol	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	-	ND (20)
2,4,6-Trichlorophenol	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	ND (10)	-
2,4-Dichlorophenol	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	ND (10)	-
2,4-Dimethylphenol	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (10)	-	ND (10)
2,4-Dinitrophenol	-	ND (50)	ND (50)	-	-	-	-	-	-	-	-	-	ND (50)	-	-	ND (50)
2,4-Dinitrotoluene	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	-	ND (10)
2,6-Dichlorophenol	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	-	-
2,6-Dinitrotoluene	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	-	ND (10)
2-Acetylaminofluorene	-	ND (100)	ND (100)	-	-	-	-	-	-	-	-	-	ND (100)	-	-	-
2-Chloronaphthalene	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	-	ND (10)
2-Chlorophenol	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	ND (10)	-
2-Methylnaphthalene	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	ND (10)	-
2-Methylphenol (o-Cresol)	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	ND (10)	-
2-Naphthylamine	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	-	-
2-Nitroaniline	-	ND (50)	ND (50)	-	-	-	-	-	-	-	-	-	ND (50)	-	-	ND (50)
2-Nitrophenol	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	ND (5)	-
2-Picoline	-	-	-	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	-	-	-	-	ND (20)	-	-
2-Toluidine	-	-	-	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	-	-	-	-	ND (20)	-	-
3,3'-Dichlorobenzidine	-	ND (50)	ND (50)	-	-	-	-	-	-	-	-	-	ND (50)	-	ND (50)	-
3,3-Dimethylbenzidine	-	ND (50)	ND (50)	-	-	-	-	-	-	-	-	-	ND (50)	-	-	-
3-Methylcholanthrene	-	-	-	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	-	-	-	-	ND (20)	-	-
3-Methylphenol	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	-	-
3-Nitroaniline	-	-	-	ND (50)	ND (50)	50 R	ND (50)	ND (50) J	ND (50)	-	-	-	-	ND (50)	-	ND (50)
4,6-Dinitro-2-methylphenol	-	ND (50)	ND (50)	-	-	-	-	-	-	-	-	-	ND (50)	-	ND (50)	-
4-Aminobiphenyl	-	ND (50)	ND (50)	-	-	-	-	-	-	-	-	-	ND (50)	-	-	-
4-Bromophenyl phenyl ether	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	ND (10)	-	ND (10)	-
4-Chloro-3-methylphenol	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	ND (10)	-
4-Chloroaniline	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (10)	ND (20)	-
4-Chlorophenyl phenyl ether	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	ND (10)	-
4-Methylphenol	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	-
4-Nitroaniline	-	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	-	-	-	ND (50)	-	-	ND (50)
4-Nitrophenol	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (50)	ND (50)	-
4-Nitroquinoline-N-oxide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-Nitro-2-Toluidine	-	-	-	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	-	-	-	-	ND (20)	-	-
7,12-Dimethylbenz(a)anthracene	-	-	-	ND (20)	ND (20)	ND (20)	ND (20)	ND (20) J	ND (20)	-	-	-	-	ND (20)	-	-
a,a-Dimethylphenethylamine	-	-	-	ND (50) J	ND (50) J	ND (50)	ND (50)	ND (50) J	ND (50)	-	-	-	-	ND (50)	-	-
Acenaphthene	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	-	ND (10)
Acenaphthylene	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	ND (10)	-
Acetophenone	-	-	-	**2.2 J**	**0.29 J**	ND (10)	ND (10)	**2.1 J**	ND (10)	-	-	-	-	ND (10)	-	-
Aniline	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	-	-
Anthracene	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	ND (10)	-
Aramite	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (80)
Benzo(a)anthracene	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	-	ND (10)
Benzo(a)pyrene	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	ND (10)	-
Benzo(b)fluoranthene	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	-	ND (10)
Benzo(g,h,i)perylene	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	-	ND (10)
Benzo(k)fluoranthene	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	-	ND (10)
Benzoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (50)	-
Benzyl Alcohol	-	ND (10)	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	ND (10)	-	-	ND (20)
bis(2-Chloroethoxy)methane	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	ND (10)	-
bis(2-Chloroethyl)ether	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	-	ND (10)
bis(2-Ethylhexyl)phthalate**	-	-	-	ND (10)	ND (10)	ND (10)	**11 JB** [AC]	ND (10)	ND (10)	-	-	-	-	ND (10)	-	ND (10)
Butyl benzylphthalate	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	-	ND (10)
Carbazole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzilate	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	-	-
Chrysene	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	-	ND (10)
Diallate	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	-	-
Dibenz(a,h)anthracene	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	-	ND (10)
Dibenzofuran	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	ND (10)	-

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00007	IMW-03-00007A	IMW-03-00007B	IMW-03-00007	IMW-03-00007	IMW-03-00008D	IMW-03-00008D
	8/13/1996 Primary	9/23/2004 Primary	12/1/2004 Primary	1/27/2015 Primary	8/19/2015 Primary	1/20/2016 Primary	5/11/2016 Primary	10/12/2016 Primary	5/31/2017 Primary	8/8/1996 Primary	8/14/1996 Primary	8/14/1996 Primary	9/23/2004 Primary	12/1/2004 Primary	12/10/1999 Primary	10/19/2000 Primary
Diethyl phthalate	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	ND (10)	-
Dimethoate	-	-	-	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	-	-	-	-	ND (20)	-	-
Dimethyl phthalate	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	-	ND (10)
Di-n-butylphthalate	-	-	-	ND (10)	**0.68 JB**	**0.68 JB**	**1.1 JB**	**2.2 JB**	**1.3 J**	-	-	-	-	ND (10)	-	ND (10)
Di-n-octyl phthalate	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	ND (10)	-
Dinoseb	-	ND (20)	ND (20)	-	-	-	-	-	-	-	-	-	ND (20)	-	-	-
Diphenylamine	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	-	-
Disulfoton	-	ND (50)	ND (50)	-	-	-	-	-	-	-	-	-	ND (50)	-	-	-
Ethyl methanesulfonate	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	-	-
Famphur	-	-	-	10 R	10 R	ND (10) J	10 R	10 R	ND (10)	-	-	-	-	ND (10)	-	-
Fluoranthene	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	ND (10)	-
Fluorene	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	-	ND (10)
Hexachlorobenzene	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	-	ND (10)
Hexachlorobutadiene	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	ND (10)	-
Hexachlorocyclopentadiene	-	ND (50) J	ND (50)	-	-	-	-	-	-	-	-	-	50 R	-	-	ND (10)
Hexachloroethane	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	-	ND (10)
Hexachloropropene	-	ND (100)	ND (100)	-	-	-	-	-	-	-	-	-	ND (100)	-	-	-
Indeno(1,2,3-cd)pyrene	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	ND (10)	-
Isophorone	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	ND (10)	-
Isosafrole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methapyrilene	-	-	-	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	-	-	-	-	ND (50)	-	-
Methyl methanesulfonate	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	-	-
Naphthalene	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	-	ND (10)
Nitrobenzene	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	ND (10)	-
N-Nitrosodiethylamine	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	-	-
N-Nitrosodimethylamine	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	-	ND (10)
N-Nitrosodi-N-butylamine	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	-	-
N-Nitrosodi-n-propylamine	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	ND (10)	-
N-Nitrosodiphenylamine	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	ND (10)	-
N-Nitrosomethylethylamine	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	ND (10)	-	-	-
N-Nitrosomorpholine	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	-	-
N-Nitrosopiperidine	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (10)	-	-
N-Nitrosopyrrolidine	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	-	-
o,o,o-Triethylphosphorothioate	-	-	-	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	-	-	-	-	ND (50)	-	-
P-DIMETHYLAMINOAZOBENZENE	-	-	-	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	-	-	-	-	ND (20)	-	-
Pentachlorobenzene	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	ND (10)	-	-
Pentachloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachloronitrobenzene	-	ND (50)	ND (50)	-	-	-	-	-	-	-	-	-	ND (50)	-	-	-
Pentachlorophenol	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	-	ND (30)
Phenacetin	-	-	-	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	-	-	-	-	ND (20)	-	-
Phenanthrene	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	ND (10)	-
Phenol	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	ND (10)	**24**
Phorate	-	-	-	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	-	-	-	-	ND (50)	-	-
p-Phenylenediamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pronamide	-	-	-	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	-	-	-	-	ND (20)	-	-
Pyrene	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	ND (10)	-	ND (10)	-
Pyridine	-	20 R	ND (20) J	-	-	-	-	-	-	-	-	-	20 R	-	-	-
Safrole	-	ND (20)	ND (20)	-	-	-	-	-	-	-	-	-	ND (20)	-	-	-
Sulfotep	-	-	-	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	-	-	-	-	ND (50)	-	-
Thionazin	-	ND (50)	ND (50)	-	-	-	-	-	-	-	-	-	ND (50)	-	-	-
Volatile Organic Compounds (ug/L)																
1,1,1,2-Tetrachloroethane	-	-	-	ND (1)	ND (1)	-	-	-	-	-	-	-	-	ND (1)	-	-
1,1,1-Trichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (1)	-	ND (5)
1,1,2,2-Tetrachloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (1)	ND (5)	-
1,1,2-Trichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (1)	ND (5)	-
1,1-Dichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (1)	ND (5)	-
1,1-Dichloroethene	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	-	-	-	ND (1)	-	-	ND (5)
1,2,3-Trichloropropane	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	-	-	-	ND (1)	-	-	-
1,2-Dibromo-3-chloropropane (DBCP)	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (2)	-	-
1,2-Dibromoethane (Ethylene Dibromide)	-	-	-	ND (1)	ND (1)	-	-	-	-	-	-	-	-	ND (1)	-	-
1,2-Dichloroethane	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	ND (1)	ND (1)	-	-	-	ND (1)	-	-	ND (5)
1,2-Dichloroethene (total)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (1)	ND (5)	-

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00004	IMW-03-00007	IMW-03-00007A	IMW-03-00007B	IMW-03-00007	IMW-03-00007	IMW-03-00008D	IMW-03-00008D
	8/13/1996 Primary	9/23/2004 Primary	12/1/2004 Primary	1/27/2015 Primary	8/19/2015 Primary	1/20/2016 Primary	5/11/2016 Primary	10/12/2016 Primary	5/31/2017 Primary	8/8/1996 Primary	8/14/1996 Primary	8/14/1996 Primary	9/23/2004 Primary	12/1/2004 Primary	12/10/1999 Primary	10/19/2000 Primary
1,4-Dioxane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Butanone (Methyl Ethyl Ketone)	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	10 R	ND (10)	-	-	-	ND (10)	-	-	ND (10)
2-Chloroethyl vinyl ether	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (50)	-
2-Hexanone	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10) J	ND (10)	-	-	-	ND (10)	-	-	ND (10)
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	ND (10)	-	-	ND (10)
Acetone	-	**0.98 JB**	ND (10)	-	-	ND (10)	ND (10)	10 R	**3.6 JB**	-	-	-	**0.92 JB**	-	ND (10)	-
Acetonitrile	-	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	-	-	-	ND (20)	-	-	-
Acrolein	-	ND (20)	ND (20)	-	-	ND (20)	ND (20)	ND (20)	ND (20)	-	-	-	ND (20)	-	-	-
Acrylonitrile	-	ND (20)	ND (20)	-	-	ND (20)	ND (20)	ND (20)	ND (20)	-	-	-	ND (20)	-	-	-
Allyl chloride	-	-	-	ND (2)	ND (2)	-	-	-	-	-	-	-	-	ND (2)	-	-
Benzene	1600 [ABCE]	ND (1)	ND (1)	-	-	**5.4**	**0.49 J**	**0.79 J**	**3.5**	260 [CE]	-	-	**5.9**	**6.2**	ND (5)	-
Bromodichloromethane	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	-	-	-	ND (1)	-	-	ND (5)
Bromoform	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (1)	ND (5)	-
Bromomethane (Methyl Bromide)	-	ND (1) J	ND (1)	ND (1) J	ND (1)	ND (1)	ND (1) J	ND (1)	ND (1)	-	-	-	ND (1) J	-	ND (10)	-
Carbon disulfide	-	**1.7**	ND (1)	ND (1)	ND (1)	ND (1)	ND (1) J	ND (1)	ND (1)	-	-	-	**1.1**	-	-	ND (5)
Carbon tetrachloride	-	-	-	ND (1)	ND (1)	-	-	-	-	-	-	-	-	ND (1)	ND (5)	-
Chlorobenzene	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	ND (1)	ND (1)	-	-	-	ND (1)	-	-	ND (5)
Chloroethane	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1) J	1 R	ND (1)	ND (1)	-	-	-	ND (1)	-	ND (10)	-
Chloroform (Trichloromethane)	-	-	-	ND (1)	ND (1)	-	-	-	-	-	-	-	-	ND (1)	-	ND (5)
Chloromethane (Methyl Chloride)	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (1)	**12**	ND (10)
Chloroprene	-	ND (2)	ND (2)	-	-	ND (2)	ND (2)	ND (2)	ND (2)	-	-	-	ND (2)	-	-	-
cis-1,2-Dichloroethene	-	-	-	ND (1)	ND (1)	-	-	-	-	-	-	-	-	ND (1)	ND (5)	-
cis-1,3-Dichloropropene	-	-	-	ND (1)	ND (1)	-	-	-	-	-	-	-	-	ND (1)	-	ND (5)
Dibromochloromethane	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	ND (1) J	ND (1)	-	-	-	ND (1)	-	-	ND (5)
Dibromomethane	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (1)	-	-
Dichlorodifluoromethane (CFC-12)	-	ND (1) J	ND (1)	ND (1)	ND (1)	ND (1)	ND (1) J	ND (1)	ND (1)	-	-	-	ND (1) J	-	-	-
Ethyl methacrylate	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (1)	-	-
Ethylbenzene	**8.6**	-	-	ND (1)	ND (1)	-	-	-	-	ND (8.2)	ND (8.2)	ND (8.2)	-	ND (1)	-	ND (5)
Iodomethane	-	ND (1)	ND (1)	ND (1)	ND (1) J	ND (1)	ND (1)	ND (1)	ND (1)	-	-	-	ND (1)	-	-	-
Isobutyl alcohol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acrylonitrile	-	-	-	ND (2)	ND (2)	-	-	-	-	-	-	-	-	ND (2)	-	-
Methyl methacrylate	-	ND (2)	ND (2)	ND (2) J	ND (2)	ND (2)	ND (2) J	ND (2)	ND (2)	-	-	-	ND (2)	-	-	-
Methylene chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (1)	ND (5)	-
Naphthalene	ND (17)	-	-	-	-	-	-	-	-	ND (17)	-	-	-	-	-	-
Propionitrile (Ethyl cyanide)	-	-	-	4 R	4 R	-	-	-	-	-	-	-	-	ND (4)	-	-
Styrene	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	ND (1)	ND (1)	-	-	-	ND (1)	-	ND (5)	-
Tetrachloroethene	ND (16)	-	-	ND (1)	ND (1)	-	-	-	-	ND (16)	ND (16)	ND (16)	-	ND (1)	ND (5)	-
Toluene	ND (10)	-	-	ND (1)	**0.73 J**	-	-	-	-	-	-	-	-	ND (1)	ND (5)	-
trans-1,2-Dichloroethene	-	ND (0.5)	ND (0.5)	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	ND (0.5)	-	-	ND (5)
trans-1,3-Dichloropropene	-	ND (1) J	ND (1)	-	-	ND (1)	ND (1)	ND (1)	ND (1)	-	-	-	ND (1) J	-	ND (5)	-
trans-1,4-Dichloro-2-butene	-	-	-	ND (1)	ND (1)	-	-	-	-	-	-	-	-	ND (1)	-	-
Trichloroethene	ND (15)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	-	ND (15)	ND (15)	ND (1)	-	-	ND (5)
Trichlorofluoromethane (CFC-11)	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (1)	-	-
Vinyl acetate	-	-	-	ND (2)	ND (2) J	-	-	-	-	-	-	-	-	ND (2)	ND (10)	-
Vinyl chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (1)	-	ND (10)
Xylene (total)	ND (17)	ND (1)	ND (1)	-	-	ND (1)	ND (1)	ND (1)	ND (1)	-	-	-	ND (1)	-	-	ND (5)

Notes and abbreviations on last page

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D
	7/12/2001 Primary	7/10/2002 Primary	6/23/2003 Primary	11/10/2004 Primary	4/19/2005 Primary	10/12/2005 Primary	7/12/2006 Primary	6/18/2007 Primary	11/27/2007 Primary	9/30/2008 Primary	8/11/2009 Primary	10/12/2010 Primary	9/20/2011 Primary	10/1/2012 Primary	9/23/2013 Primary
Inorganic Compounds (ug/L)															
Antimony, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic, Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic, Total	-	-	-	ND (10)	2.8 J [E]	-	-	ND (10)	ND (10)	-	-	-	-	-	-
Barium, Total	-	-	-	**219**	**200**	-	-	-	-	-	-	-	-	-	-
Beryllium, Total	-	-	-	ND (5)	ND (5)	-	-	**0.48 JB**	ND (5)	-	-	-	-	-	-
Cadmium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium, Total	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	-
Cobalt, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper, Total	-	-	-	ND (25)	ND (25)	-	-	ND (25)	ND (25)	-	-	-	-	-	-
Cyanide	-	-	-	ND (10)	ND (10)	-	-	ND (10)	33 [C]	-	-	-	-	-	-
Iron, Total	-	-	-	2860 [BC]	2240 [BC]	-	-	1270 [BC]	1310 [BC]	-	-	-	-	-	-
Lead, Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium, Total	-	-	-	**81000**	**65000**	-	-	**36500**	**36100**	-	-	-	-	-	-
Manganese, Total	-	-	-	130 [B]	105 [B]	-	-	76.1 [B]	63.3 [B]	-	-	-	-	-	-
Mercury, Total	-	-	-	ND (0.2)	ND (0.2)	-	-	ND (0.2)	ND (0.2) J	-	-	-	-	-	-
Nickel, Total	-	-	-	**3.7 J**	ND (40)	-	-	ND (40)	ND (40)	-	-	-	-	-	-
Selenium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium, Total	-	-	-	**1070000**	**1060000**	-	-	**752000**	**826000**	-	-	-	-	-	-
Thallium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin, Total	-	-	-	ND (100)	ND (100)	-	-	ND (100)	ND (100)	-	-	-	-	-	-
Vanadium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc, Total	-	-	-	ND (20)	ND (20)	-	-	ND (20)	ND (20)	-	-	-	-	-	-
Other (ug/L)															
Ammonia (as N)	-	-	-	8500 [C]	7500 [C]	-	-	4800 [C]	6300 [C]	-	-	-	-	-	-
Chloride	-	-	-	**2290000**	**2080000**	-	-	**252000**	**1110000**	-	-	-	-	-	-
Hardness as CaCO3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH (lab) (pH units)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	-	-	-	**200000**	**198000**	-	-	**32200**	**151000**	-	-	-	-	-	-
Sulfide	-	-	-	ND (1000)	ND (1000)	-	-	**1500**	ND (1000)	-	-	-	-	-	-
Total Dissolved Solids (TDS)	-	-	-	**4000000**	**3700000**	-	-	**2200000**	**2100000**	-	-	-	-	-	-
Total phenols	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids (TSS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PCBs (ug/L)															
4,4'-DDD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4'-DDT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
alpha-BHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
delta-BHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endosulfan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endrin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endrin ketone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
gamma-BHC (Lindane)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heptachlor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heptachlor epoxide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Semi-Volatile Organic Compounds (ug/L)															
1,2,4,5-Tetrachlorobenzene	-	-	ND (10)	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	-	ND (10)	-
1,2,4-Trichlorobenzene	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	ND (10)	-	ND (10)
1,2-Dichlorobenzene	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	ND (10)
1,2-Diphenylhydrazine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3,5-Trinitrobenzene	-	-	-	ND (50)	ND (50)	-	-	50 R	ND (50)	-	-	-	-	-	ND (50)
1,3-Dichlorobenzene	-	-	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-
1,3-Dinitrobenzene	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	ND (10)
1,4-Dichlorobenzene	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	ND (10)	ND (10)	ND (10)
1,4-Naphthoquinone	-	-	-	-	-	ND (50)	ND (50)	-	-	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	-

	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D
	7/12/2001 Primary	7/10/2002 Primary	6/23/2003 Primary	11/10/2004 Primary	4/19/2005 Primary	10/12/2005 Primary	7/12/2006 Primary	6/18/2007 Primary	11/27/2007 Primary	9/30/2008 Primary	8/11/2009 Primary	10/12/2010 Primary	9/20/2011 Primary	10/1/2012 Primary	9/23/2013 Primary
1-Naphthylamine	-	-	ND (10)	-	-	-	-	-	-	-	-	-	-	-	-
2,2'-oxybis(1-Chloropropane)	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2,3,4,6-Tetrachlorophenol	-	-	-	ND (50)	ND (50)	-	-	ND (50)	ND (50)	-	-	-	-	-	ND (50)
2,4,5-Trichlorophenol	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	ND (10) J	-	ND (10)
2,4,6-Trichlorophenol	ND (10)	ND (10)	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	-	ND (10)	-
2,4-Dichlorophenol	-	-	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10) J	ND (10)	-
2,4-Dimethylphenol	ND (10)	ND (10)	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	-	-	-
2,4-Dinitrophenol	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	-	-	ND (50)	ND (50)	-	-	-	-	-	ND (50)
2,4-Dinitrotoluene	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	ND (10)
2,6-Dichlorophenol	-	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	ND (10)
2,6-Dinitrotoluene	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	ND (10)
2-Acetylaminofluorene	-	-	ND (100)	ND (100)	ND (100)	-	-	ND (100)	ND (100)	-	-	-	-	-	ND (100)
2-Chloronaphthalene	-	-	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	-	ND (10)	-
2-Chlorophenol	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	ND (10)
2-Methylnaphthalene	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	ND (10)	-	ND (10)
2-Methylphenol (o-Cresol)	-	-	ND (10)	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10) J	ND (10)	-
2-Naphthylamine	-	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	10 R	-	-	-	ND (10)	-	ND (10)
2-Nitroaniline	-	-	ND (50)	ND (50)	ND (50)	-	-	ND (50)	ND (50)	-	-	-	ND (50)	-	ND (50)
2-Nitrophenol	ND (10)	ND (10)	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10) J	ND (10)	-
2-Picoline	-	-	ND (20)	-	-	ND (20)	ND (20)	-	-	ND (20)	ND (20)	ND (20)	-	ND (20)	ND (20)
2-Toluidine	-	-	ND (20)	-	-	ND (20)	ND (20)	-	-	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	-
3,3'-Dichlorobenzidine	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	-	-	ND (50)	ND (50)	-	-	-	ND (50)	-	ND (50)
3,3-Dimethylbenzidine	-	-	-	ND (50)	ND (50)	-	-	ND (50)	ND (50)	-	-	-	ND (50)	-	ND (50)
3-Methylcholanthrene	-	-	-	-	-	ND (20)	ND (20)	-	-	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	-
3-Methylphenol	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	-
3-Nitroaniline	ND (50)	ND (50)	ND (50)	-	-	ND (50)	ND (50)	-	-	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	-
4,6-Dinitro-2-methylphenol	-	-	ND (50)	ND (50)	ND (50)	-	-	ND (50)	ND (50)	-	-	-	ND (50) J	-	ND (50)
4-Aminobiphenyl	-	-	-	ND (50)	ND (50)	-	-	ND (50)	ND (50)	-	-	-	ND (50)	-	ND (50)
4-Bromophenyl phenyl ether	-	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	ND (10)	ND (10)	ND (10)
4-Chloro-3-methylphenol	-	-	ND (10)	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10) J	ND (10)	-
4-Chloroaniline	-	-	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	-	-	-
4-Chlorophenyl phenyl ether	-	-	ND (10)	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-
4-Methylphenol	-	-	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10) J	-	-
4-Nitroaniline	-	-	ND (50)	ND (50)	ND (50)	-	-	ND (50)	ND (50)	-	-	-	ND (50)	ND (50)	ND (50)
4-Nitrophenol	ND (50)	ND (50)	-	-	-	ND (50)	ND (50)	-	-	ND (50)	ND (50)	ND (50)	-	-	-
4-Nitroquinoline-N-oxide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-Nitro-2-Toluidine	-	-	ND (20)	-	-	ND (20)	ND (20)	-	-	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	-
7,12-Dimethylbenz(a)anthracene	-	-	ND (20)	-	-	ND (20)	ND (20)	-	-	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	-
a,a-Dimethylphenethylamine	-	-	-	-	-	ND (50)	ND (50)	-	-	ND (50)	ND (50)	ND (50)	50 R	ND (50)	-
Acenaphthene	ND (10)	ND (10)	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-
Acenaphthylene	-	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	ND (10)
Acetophenone	-	-	ND (10)	-	-	ND (10)	**0.56 J**	-	-	ND (10)	**0.35 J**	ND (10)	**0.38 J**	ND (10)	-
Aniline	-	-	ND (10)	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-
Anthracene	-	-	ND (10)	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	-	ND (10)	-
Aramite	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	ND (10)
Benzo(a)pyrene	-	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	ND (10)
Benzo(b)fluoranthene	ND (10)	ND (10)	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-
Benzo(g,h,i)perylene	ND (10)	ND (10)	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-
Benzo(k)fluoranthene	ND (10)	ND (10)	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-
Benzoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzyl Alcohol	-	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	ND (10) J	ND (10)	ND (10)
bis(2-Chloroethoxy)methane	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	ND (10)	-	ND (10)
bis(2-Chloroethyl)ether	ND (10)	ND (10)	ND (10)	-	-	ND (10) J	ND (10)	-	-	ND (10)	ND (10)	ND (10)	-	ND (10)	-
bis(2-Ethylhexyl)phthalate**	ND (10)	ND (10)	ND (10)	-	-	ND (10)	**1.3 JB [C]**	-	-	**2.7 J [C]**	**0.93 JB [C]**	**2 JB [C]**	-	**5.1 JB [ACI]**	-
Butyl benzylphthalate	ND (10)	ND (10)	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-
Carbazole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzilate	-	-	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-
Chrysene	ND (10)	ND (10)	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-
Diallate	-	-	ND (10)	ND (10)	ND (10)	-	-	10 R	ND (10)	-	-	-	-	-	ND (10)
Dibenz(a,h)anthracene	ND (10)	ND (10)	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-
Dibenzofuran	-	-	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-

	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D
	7/12/2001 Primary	7/10/2002 Primary	6/23/2003 Primary	11/10/2004 Primary	4/19/2005 Primary	10/12/2005 Primary	7/12/2006 Primary	6/18/2007 Primary	11/27/2007 Primary	9/30/2008 Primary	8/11/2009 Primary	10/12/2010 Primary	9/20/2011 Primary	10/1/2012 Primary	9/23/2013 Primary
Diethyl phthalate	-	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	ND (10)
Dimethoate	-	-	ND (20)	-	-	ND (20)	ND (20)	-	-	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	-
Dimethyl phthalate	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	ND (10)
Di-n-butylphthalate	ND (10)	ND (10)	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10)	**0.81 J**	-
Di-n-octyl phthalate	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	ND (10)	-	ND (10)
Dinoseb	-	-	ND (20)	20 R	ND (20)	-	-	20 R	ND (20)	-	-	-	-	-	ND (20)
Diphenylamine	-	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	ND (10)
Disulfoton	-	-	ND (50)	ND (50)	ND (50)	-	-	ND (50)	ND (50)	-	-	-	-	-	ND (50)
Ethyl methanesulfonate	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	ND (10)
Famphur	-	-	-	-	-	ND (10)	ND (10)	-	-	ND (10)	10 R	10 R	-	10 R	-
Fluoranthene	-	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	ND (10)
Fluorene	ND (10)	ND (10)	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-
Hexachlorobenzene	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	-	ND (10)	-
Hexachlorobutadiene	ND (10)	ND (10)	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	-	ND (10)	-
Hexachlorocyclopentadiene	ND (50)	ND (50)	ND (50)	50 R	ND (50)	-	-	50 R	50 R	-	-	-	-	-	50 R
Hexachloroethane	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	ND (10)
Hexachloropropene	-	-	ND (100)	ND (100)	ND (100)	-	-	ND (100)	ND (100)	-	-	-	-	-	ND (100)
Indeno(1,2,3-cd)pyrene	-	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	ND (10)
Isophorone	-	-	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-
Isosafrole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methapyrilene	-	-	-	-	-	ND (50)	ND (50)	-	-	ND (50)	ND (50)	ND (50)	-	ND (50)	-
Methyl methanesulfonate	-	-	ND (10)	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-
Naphthalene	-	-	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	-	ND (10)	-
Nitrobenzene	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	ND (10)
N-Nitrosodiethylamine	-	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	ND (10)
N-Nitrosodimethylamine	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	ND (10)
N-Nitrosodi-N-butylamine	-	-	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	-	ND (10)	-
N-Nitrosodi-n-propylamine	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	ND (10)
N-Nitrosodiphenylamine	-	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	ND (10)
N-Nitrosomethylethylamine	-	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	ND (10)	ND (10)
N-Nitrosomorpholine	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	ND (10)
N-Nitrosopiperidine	-	-	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	-	-	-
N-Nitrosopyrrolidine	-	-	ND (10)	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	-	ND (10)	-
o,o,o-Triethylphosphorothioate	-	-	-	-	-	ND (50)	ND (50)	-	-	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	-
P-DIMETHYLAMINOAZOBENZENE	-	-	ND (20)	-	-	ND (20)	ND (20)	-	-	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	-
Pentachlorobenzene	-	-	ND (10)	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-
Pentachloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachloronitrobenzene	-	-	ND (50)	ND (50)	ND (50)	-	-	ND (50)	ND (50)	-	-	-	-	-	ND (50)
Pentachlorophenol	-	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	ND (10) J	-	ND (10)
Phenacetin	-	-	ND (20)	-	-	ND (20)	ND (20)	-	-	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	-
Phenanthrene	-	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	ND (10)
Phenol	**7.3 J**	ND (10)	ND (10)	**1.6 J**	**0.57 J**	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-
Phorate	-	-	-	-	-	ND (50)	ND (50)	-	-	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	-
p-Phenylenediamine	-	-	ND (100)	-	-	-	-	-	-	-	-	-	-	-	-
Pronamide	-	-	-	-	-	ND (20)	ND (20)	-	-	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	-
Pyrene	-	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	-	-	ND (10)
Pyridine	-	-	-	ND (20)	ND (20)	-	-	ND (20)	ND (20)	-	-	-	ND (20)	-	ND (20)
Safrole	-	-	-	ND (20)	ND (20)	-	-	ND (20)	ND (20)	-	-	-	ND (20)	-	ND (20)
Sulfotep	-	-	-	-	-	ND (50)	ND (50)	-	-	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	-
Thionazin	-	-	ND (50)	ND (50)	ND (50)	-	-	ND (50)	ND (50)	-	-	-	-	-	ND (50)
Volatile Organic Compounds (ug/L)															
1,1,1,2-Tetrachloroethane	-	-	ND (1)	-	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	ND (1)	-	-	-
1,1,1-Trichloroethane	-	-	ND (1)	-	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	ND (1)	-	-	-
1,1,2,2-Tetrachloroethane	ND (1)	ND (1)	-	-	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	ND (1) J	-	-	-
1,1,2-Trichloroethane	ND (1)	ND (1)	-	-	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	ND (1)	-	-	-
1,1-Dichloroethane	ND (1)	ND (1)	ND (1)	-	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	ND (1)	-	-	-
1,1-Dichloroethene	-	-	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	-	-	-	ND (1)	ND (1)	ND (1)
1,2,3-Trichloropropane	-	-	ND (1)	ND (1)	ND (1)	-	-	ND (1)	ND (1)	-	-	-	ND (1)	ND (1) J	ND (1)
1,2-Dibromo-3-chloropropane (DBCP)	-	-	-	-	-	ND (2)	ND (2)	-	-	ND (2)	ND (2)	ND (2)	-	-	-
1,2-Dibromoethane (Ethylene Dibromide)	-	-	ND (1)	-	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	ND (1)	-	-	-
1,2-Dichloroethane	ND (1)	-	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	-	-	-	ND (1)	ND (1) J	ND (1)
1,2-Dichloroethene (total)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	ND (1)	ND (1)	-	-	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	ND (1)	-	-	-

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D
	7/12/2001 Primary	7/10/2002 Primary	6/23/2003 Primary	11/10/2004 Primary	4/19/2005 Primary	10/12/2005 Primary	7/12/2006 Primary	6/18/2007 Primary	11/27/2007 Primary	9/30/2008 Primary	8/11/2009 Primary	10/12/2010 Primary	9/20/2011 Primary	10/1/2012 Primary	9/23/2013 Primary
1,4-Dioxane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Butanone (Methyl Ethyl Ketone)	-	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	ND (10)	ND (10)	**0.79 J**
2-Chloroethyl vinyl ether	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	ND (10)	ND (10)	ND (10)
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	-	-	-	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	-	-	ND (10)	**0.4 J**	ND (10)
Acetone	**0.77 J**	ND (10)	-	**1.4 JB**	ND (10)	-	-	ND (10)	ND (10)	-	-	-	ND (10)	**1.6 JB**	**5.8 JB**
Acetonitrile	-	-	-	ND (20)	ND (20)	-	-	ND (20)	ND (20)	-	-	-	ND (20)	ND (20) J	ND (20) J
Acrolein	-	-	-	ND (20)	ND (20)	-	-	ND (20)	ND (20)	-	-	-	ND (20)	ND (20)	ND (20) J
Acrylonitrile	-	-	-	ND (20)	ND (20)	-	-	ND (20)	ND (20)	-	-	-	ND (20)	ND (20)	ND (20)
Allyl chloride	-	-	ND (2)	-	-	ND (2)	ND (2)	-	-	ND (2)	ND (2) J	ND (2)	-	-	-
Benzene	ND (1)	ND (1)	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	-	-	-	ND (1)	ND (1)	ND (1)
Bromodichloromethane	-	-	-	ND (1)	ND (1)	-	-	ND (1)	ND (1) J	-	-	-	ND (1)	ND (1)	ND (1)
Bromoform	ND (1)	ND (1)	ND (1)	-	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	ND (1)	-	-	-
Bromomethane (Methyl Bromide)	ND (1)	ND (1)	-	ND (1)	ND (1) J	-	-	ND (1)	ND (1)	-	-	-	ND (1)	ND (1)	ND (1)
Carbon disulfide	-	-	-	**0.42 J**	**0.37 J**	-	-	ND (1)	**0.42 JB**	-	-	-	**0.28 JB**	ND (1)	ND (1)
Carbon tetrachloride	ND (1)	ND (1)	ND (1)	-	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	ND (1)	-	-	-
Chlorobenzene	-	-	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	-	-	-	ND (1)	ND (1)	ND (1)
Chloroethane	ND (1)	ND (1)	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	-	-	-	ND (1) J	ND (1) J	ND (1)
Chloroform (Trichloromethane)	-	-	ND (1)	-	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	ND (1)	-	-	-
Chloromethane (Methyl Chloride)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	-	ND (1)	-
Chloroprene	-	-	ND (2)	ND (2)	ND (2)	-	-	ND (2)	ND (2)	-	-	-	ND (2)	ND (2)	ND (2)
cis-1,2-Dichloroethene	-	-	-	-	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	ND (1)	-	-	-
cis-1,3-Dichloropropene	ND (1)	-	ND (1)	-	-	ND (1) J	ND (1)	-	-	ND (1)	ND (1)	ND (1)	-	-	-
Dibromochloromethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	-	-	ND (1)	ND (1)	-	-	-	ND (1)	ND (1)	ND (1)
Dibromomethane	-	-	ND (1)	-	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	ND (1)	-	-	-
Dichlorodifluoromethane (CFC-12)	-	-	-	ND (1) J	ND (1) J	-	-	ND (1) J	ND (1)	-	-	-	ND (1)	ND (1)	ND (1)
Ethyl methacrylate	-	-	-	-	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	ND (1)	-	-	-
Ethylbenzene	ND (1)	-	ND (1)	-	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	ND (1)	-	-	-
Iodomethane	-	-	-	ND (1)	1 R	-	-	ND (1)	ND (1)	-	-	-	ND (1)	ND (1)	ND (1)
Isobutyl alcohol	-	-	ND (50)	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acrylonitrile	-	-	-	-	-	ND (2)	ND (2)	-	-	ND (2)	ND (2)	ND (2)	-	-	-
Methyl methacrylate	-	-	ND (2)	ND (2)	ND (2)	-	-	ND (2) J	ND (2)	-	-	-	ND (2)	ND (2)	ND (2)
Methylene chloride	ND (1)	ND (1)	ND (1)	-	-	ND (1) J	ND (1)	-	-	ND (1)	ND (1)	ND (1)	-	-	-
Naphthalene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Propionitrile (Ethyl cyanide)	-	-	ND (4)	-	-	ND (4)	ND (4)	-	-	ND (4)	ND (4)	4 R	-	-	-
Styrene	-	ND (1)	-	ND (1)	ND (1) J	-	-	ND (1)	ND (1)	-	-	-	ND (1)	ND (1)	ND (1)
Tetrachloroethene	-	-	-	-	-	ND (1)	ND (1) J	-	-	ND (1) J	ND (1)	ND (1)	-	-	-
Toluene	ND (1)	ND (1)	ND (1)	-	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	ND (1)	-	-	-
trans-1,2-Dichloroethene	-	-	-	ND (0.5)	ND (0.5)	-	-	ND (0.5)	ND (0.5)	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,3-Dichloropropene	-	ND (1)	-	ND (1) J	ND (1)	-	-	ND (1) J	ND (1)	-	-	-	ND (1)	ND (1)	ND (1)
trans-1,4-Dichloro-2-butene	-	-	ND (1)	-	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	1 R	-	-	-
Trichloroethene	-	-	ND (1)	ND (1)	ND (1)	-	-	ND (1)	ND (1)	-	-	-	ND (1)	ND (1)	ND (1)
Trichlorofluoromethane (CFC-11)	-	-	ND (1)	-	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	ND (1)	-	-	-
Vinyl acetate	-	-	ND (2)	-	-	ND (2)	ND (2)	-	-	ND (2)	ND (2)	ND (2)	-	-	-
Vinyl chloride	-	-	ND (1)	-	-	ND (1)	ND (1)	-	-	ND (1)	ND (1)	ND (1)	-	-	-
Xylene (total)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	-	-	ND (1)	ND (1)	-	-	-	ND (1)	ND (1)	ND (1)

Notes and abbreviations on last page

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S
	8/25/2014 Primary	9/1/2015 Primary	9/20/2016 Primary	10/21/1998 Primary	11/19/1999 Primary	10/19/2000 Primary	7/10/2001 Primary	7/10/2002 Primary	6/23/2003 Primary	11/10/2004 Primary	4/19/2005 Primary	10/12/2005 Primary	7/12/2006 Primary	6/18/2007 Primary	11/27/2007 Primary
Inorganic Compounds (ug/L)															
Antimony, Total	-	-	-	-	-	-	-	-	-	ND (60)	ND (60)	-	-	-	**3.7 JB**
Arsenic, Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (10)	-
Barium, Total	-	-	-	-	-	-	-	-	-	ND (200)	ND (200)	-	-	-	**57.6 J**
Beryllium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.47 JB**	-
Cadmium, Total	-	-	-	-	-	-	-	-	-	**0.29 JB**	ND (5)	-	-	-	ND (5)
Chromium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (10)	-
Cobalt, Total	-	-	-	-	-	-	-	-	-	ND (50)	ND (50)	-	-	-	ND (50)
Copper, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (25)	-
Cyanide	-	-	-	-	-	-	-	-	-	ND (10)	ND (10)	-	-	ND (10)	14 [C]
Iron, Total	-	-	-	-	-	-	-	-	-	607 [B]	1230 [BC]	-	-	5380 [BCG]	1960 [BC]
Lead, Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium, Total	-	-	-	-	-	-	-	-	-	**14300**	**19000**	-	-	**34400**	**13500**
Manganese, Total	-	-	-	-	-	-	-	-	-	110 [B]	174 [B]	-	-	588 [BG]	142 [B]
Mercury, Total	-	-	-	-	-	-	-	-	-	ND (0.2)	ND (0.2)	-	-	ND (0.2)	ND (0.2) J
Nickel, Total	-	-	-	-	-	-	-	-	-	ND (40)	ND (40)	-	-	ND (40)	ND (40)
Selenium, Total	-	-	-	-	-	-	-	-	-	ND (5)	ND (5)	-	-	-	ND (5)
Silver, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium, Total	-	-	-	-	-	-	-	-	-	**87900**	**170000**	-	-	**666000**	**332000**
Thallium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (100)	-
Vanadium, Total	-	-	-	-	-	-	-	-	-	**0.87 J**	ND (50)	-	-	-	**1.7 JB**
Zinc, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (20)	-
Other (ug/L)															
Ammonia (as N)	-	-	-	-	-	-	-	-	-	**200**	**200**	-	-	**300**	**600**
Chloride	-	-	-	-	-	-	-	-	-	**91900**	**176000**	-	-	**1310000**	**350000**
Hardness as CaCO3	-	-	-	-	-	-	-	-	-	**250000**	-	-	-	-	**250000**
pH (lab) (pH units)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	-	-	-	-	-	-	-	-	-	**65800**	**65700**	-	-	**60000**	**43000**
Sulfide	-	-	-	-	-	-	-	-	-	ND (1000)	ND (1000)	-	-	**1800**	ND (1000)
Total Dissolved Solids (TDS)	-	-	-	-	-	-	-	-	-	-	**700000**	-	-	**3100000**	-
Total phenols	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids (TSS)	-	-	-	-	-	-	-	-	-	ND (4000)	ND (4000)	-	-	ND (4000)	ND (4000)
PCBs (ug/L)															
4,4'-DDD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4'-DDT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
alpha-BHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
delta-BHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endosulfan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endrin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endrin ketone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
gamma-BHC (Lindane)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heptachlor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heptachlor epoxide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Semi-Volatile Organic Compounds (ug/L)															
1,2,4,5-Tetrachlorobenzene	ND (10)	ND (10)	-	-	-	-	-	-	ND (10)	-	-	-	-	-	-
1,2,4-Trichlorobenzene	-	-	ND (10)	-	-	-	-	ND (10)	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
1,2-Dichlorobenzene	-	-	ND (10)	-	-	-	-	ND (10)	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
1,2-Diphenylhydrazine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3,5-Trinitrobenzene	-	-	ND (50)	-	-	-	-	-	-	ND (50)	ND (50) J	ND (50)	ND (50)	ND (50)	ND (50)
1,3-Dichlorobenzene	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	-	ND (10)	-	-	-	-	-	-
1,3-Dinitrobenzene	-	-	ND (10)	-	-	-	-	-	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
1,4-Dichlorobenzene	ND (10)	ND (10)	-	-	-	-	-	ND (10)	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
1,4-Naphthoquinone	ND (50)	ND (50)	-	-	-	-	-	-	ND (50)	-	-	-	-	-	-

TABLE 1
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ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S
	8/25/2014 Primary	9/1/2015 Primary	9/20/2016 Primary	10/21/1998 Primary	11/19/1999 Primary	10/19/2000 Primary	7/10/2001 Primary	7/10/2002 Primary	6/23/2003 Primary	11/10/2004 Primary	4/19/2005 Primary	10/12/2005 Primary	7/12/2006 Primary	6/18/2007 Primary	11/27/2007 Primary
1-Naphthylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2'-oxybis(1-Chloropropane)	ND (10)	ND (10)	-	-	-	-	-	ND (10)	-	-	-	-	-	-	-
2,3,4,6-Tetrachlorophenol	-	-	ND (50)	-	-	-	-	-	ND (50)	ND (50)	ND (50) J	ND (50)	ND (50)	ND (50)	ND (50)
2,4,5-Trichlorophenol	-	-	ND (10)	-	-	-	-	ND (10)	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
2,4,6-Trichlorophenol	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
2,4-Dichlorophenol	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	-	ND (10)	-	-	-	-	-	-
2,4-Dimethylphenol	-	-	ND (10)	-	-	-	-	ND (10)	ND (10)	-	-	-	-	-	-
2,4-Dinitrophenol	-	-	ND (50) J	-	-	-	-	ND (50)	-	ND (50)	ND (50) J	ND (50)	ND (50)	ND (50) J	ND (50)
2,4-Dinitrotoluene	-	-	ND (10)	-	-	-	-	ND (10)	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
2,6-Dichlorophenol	-	-	ND (10)	-	-	-	-	-	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
2,6-Dinitrotoluene	-	-	ND (10)	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
2-Acetylaminofluorene	-	-	ND (100)	-	-	-	-	-	-	ND (100)	ND (100) J	ND (100)	ND (100)	ND (100)	ND (100)
2-Chloronaphthalene	ND (10)	ND (10)	-	-	-	-	ND (10)	-	ND (10)	-	-	-	-	-	-
2-Chlorophenol	-	-	ND (10)	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
2-Methylnaphthalene	-	-	ND (10)	-	ND (10)	ND (10)	-	ND (10)	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
2-Methylphenol (o-Cresol)	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	-	ND (10)	-	-	-	-	-	-
2-Naphthylamine	-	-	ND (10)	-	-	-	-	-	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	10 R
2-Nitroaniline	-	-	ND (50)	-	-	-	ND (50)	-	-	ND (50)	ND (50) J	ND (50)	ND (50)	ND (50)	ND (50)
2-Nitrophenol	ND (10)	ND (10)	-	-	ND (5)	ND (5)	-	ND (10)	ND (10)	-	-	-	-	-	-
2-Picoline	ND (20)	ND (20)	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Toluidine	ND (20)	ND (20)	-	-	-	-	-	-	ND (20)	-	-	-	-	-	-
3,3'-Dichlorobenzidine	-	-	ND (50)	-	ND (50)	ND (50)	-	ND (50)	-	ND (50)	ND (50) J	ND (50)	ND (50)	ND (50)	ND (50)
3,3-Dimethylbenzidine	-	-	ND (50)	-	-	-	-	-	ND (50)	ND (50)	ND (50) J	ND (50)	ND (50)	ND (50)	ND (50)
3-Methylcholanthrene	ND (20)	ND (20)	-	-	-	-	-	-	ND (20)	-	-	-	-	-	-
3-Methylphenol	-	-	-	-	-	-	-	-	ND (10)	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
3-Nitroaniline	ND (50)	ND (50)	-	-	-	-	-	ND (50)	ND (50)	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	-	-	ND (50)	-	ND (50)	ND (50)	ND (50)	-	-	ND (50)	ND (50) J	ND (50)	ND (50)	ND (50)	ND (50)
4-Aminobiphenyl	-	-	ND (50)	-	-	-	-	-	-	ND (50)	ND (50) J	ND (50)	ND (50)	ND (50)	ND (50)
4-Bromophenyl phenyl ether	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
4-Chloro-3-methylphenol	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	-	-	-	-	-	-	-	-
4-Chloroaniline	-	-	ND (10)	-	ND (20)	ND (20)	ND (10)	-	ND (10)	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	-	-	-	-	-	-	-	-
4-Methylphenol	-	-	ND (10)	-	ND (10)	ND (10)	ND (10)	-	ND (10)	-	-	-	-	-	-
4-Nitroaniline	ND (50)	ND (50)	-	-	-	-	ND (50)	-	-	ND (50)	ND (50) J	ND (50)	ND (50)	ND (50)	ND (50)
4-Nitrophenol	-	-	ND (50)	-	ND (50)	ND (50)	-	ND (50)	ND (50)	-	-	-	-	-	-
4-Nitroquinoline-N-oxide	-	-	-	-	-	-	-	-	ND (100)	-	-	-	-	-	-
5-Nitro-2-Toluidine	ND (20)	ND (20)	-	-	-	-	-	-	ND (20)	-	-	-	-	-	-
7,12-Dimethylbenz(a)anthracene	ND (20)	ND (20)	-	-	-	-	-	-	-	-	-	-	-	-	-
a,a-Dimethylphenethylamine	ND (50) J	ND (50)	-	-	-	-	-	-	ND (50)	-	-	-	-	-	-
Acenaphthene	ND (10)	ND (10)	-	-	-	-	-	ND (10)	ND (10)	-	-	-	-	-	-
Acenaphthylene	-	-	ND (10)	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
Acetophenone	ND (10)	**0.56 J**	ND (10)	-	-	-	-	-	ND (10)	-	-	-	-	-	-
Aniline	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	-	-	-	-	-	-	-	-
Aramite	-	-	-	-	-	-	-	-	ND (10)	-	-	-	-	-	-
Benzidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	-	-	ND (10)	-	-	-	-	ND (10)	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
Benzo(a)pyrene	-	-	ND (10)	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
Benzo(b)fluoranthene	ND (10)	ND (10)	-	-	-	-	-	ND (10)	ND (10)	-	-	-	-	-	-
Benzo(g,h,i)perylene	ND (10)	ND (10) J	-	-	-	-	-	ND (10)	ND (10)	-	-	-	-	-	-
Benzo(k)fluoranthene	ND (10)	ND (10)	-	-	-	-	-	ND (10)	ND (10)	-	-	-	-	-	-
Benzoic acid	-	-	-	-	ND (50)	ND (50)	-	-	-	-	-	-	-	-	-
Benzyl Alcohol	ND (10)	ND (10)	-	-	-	-	-	-	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
bis(2-Chloroethoxy)methane	-	-	ND (10)	-	ND (10)	ND (10)	ND (10)	-	ND (10)	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
bis(2-Chloroethyl)ether	ND (10)	ND (10)	-	-	-	-	-	ND (10)	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate**	**5 JB** [ACI]	**1.9 JB** [C]	ND (10)	-	-	-	-	ND (10)	-	-	-	-	-	-	-
Butyl benzylphthalate	ND (10)	ND (10)	-	-	-	-	-	-	ND (10)	-	-	-	-	-	-
Carbazole	-	-	-	-	-	-	ND (20)	-	-	-	-	-	-	-	-
Chlorobenzilate	ND (10)	ND (10)	-	-	-	-	-	-	ND (10)	-	-	-	-	-	-
Chrysene	ND (10)	ND (10)	-	-	-	-	-	ND (10)	ND (10)	-	-	-	-	-	-
Diallate	-	-	ND (10)	-	-	-	-	-	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
Dibenz(a,h)anthracene	ND (10)	ND (10)	-	-	-	-	-	ND (10)	ND (10)	-	-	-	-	-	-
Dibenzofuran	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	-	ND (10)	-	-	-	-	-	-

	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S
	8/25/2014 Primary	9/1/2015 Primary	9/20/2016 Primary	10/21/1998 Primary	11/19/1999 Primary	10/19/2000 Primary	7/10/2001 Primary	7/10/2002 Primary	6/23/2003 Primary	11/10/2004 Primary	4/19/2005 Primary	10/12/2005 Primary	7/12/2006 Primary	6/18/2007 Primary	11/27/2007 Primary
Diethyl phthalate	-	-	ND (10)	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
Dimethoate	ND (20)	ND (20)	-	-	-	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	-	-	ND (10)	-	-	-	-	ND (10)	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
Di-n-butylphthalate	ND (10)	**1.1 JB**	ND (10)	-	-	-	-	ND (10)	ND (10)	-	-	-	-	-	-
Di-n-octyl phthalate	-	-	ND (10)	-	ND (10)	ND (10)	ND (10)	-	ND (10)	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
Dinoseb	-	-	ND (20)	-	-	-	-	-	-	20 R	ND (20) J	ND (20)	ND (20)	ND (20) J	ND (20)
Diphenylamine	-	-	ND (10)	-	-	-	-	-	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
Disulfoton	-	-	ND (50)	-	-	-	-	-	-	ND (50)	ND (50) J	ND (50)	ND (50)	ND (50)	ND (50)
Ethyl methanesulfonate	-	-	ND (10)	-	-	-	-	-	ND (10)	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
Famphur	10 R	10 R	-	-	-	-	-	-	ND (10)	-	-	-	-	-	-
Fluoranthene	-	-	ND (10)	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
Fluorene	ND (10)	ND (10)	-	-	-	-	-	ND (10)	ND (10)	-	-	-	-	-	-
Hexachlorobenzene	ND (10)	ND (10)	-	-	-	-	-	ND (10)	-	-	-	-	-	-	-
Hexachlorobutadiene	ND (10)	ND (10)	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
Hexachlorocyclopentadiene	-	-	ND (50)	-	-	-	-	ND (50)	-	50 R	ND (50) J	50 R	50 R	50 R	50 R
Hexachloroethane	-	-	ND (10)	-	-	-	-	ND (10)	ND (10)	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
Hexachloropropene	-	-	ND (100)	-	-	-	-	-	-	ND (100)	ND (100) J	ND (100)	ND (100)	ND (100)	ND (100)
Indeno(1,2,3-cd)pyrene	-	-	ND (10)	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
Isophorone	ND (10)	ND (10)	-	-	ND (10)	ND (10)	ND (10)	-	ND (10)	-	-	-	-	-	-
Isosafrole	-	-	-	-	-	-	-	-	ND (20)	-	-	-	-	-	-
Methapyrilene	ND (50)	ND (50)	-	-	-	-	-	-	ND (50)	-	-	-	-	-	-
Methyl methanesulfonate	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	ND (10)	ND (10)	-	-	-	-	ND (10)	-	ND (10)	-	-	-	-	-	-
Nitrobenzene	-	-	ND (10)	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
N-Nitrosodiethylamine	-	-	ND (10)	-	-	-	-	-	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
N-Nitrosodimethylamine	-	-	ND (10) J	-	-	-	-	-	ND (10)	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
N-Nitrosodi-N-butylamine	ND (10)	ND (10)	-	-	-	-	-	-	ND (10)	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	-	ND (10)	-	ND (10)	ND (10)	ND (10)	-	ND (10)	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
N-Nitrosodiphenylamine	-	-	ND (10)	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
N-Nitrosomethylethylamine	ND (10)	ND (10)	-	-	-	-	-	-	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
N-Nitrosomorpholine	-	-	ND (10)	-	-	-	-	-	ND (10)	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
N-Nitrosopiperidine	-	-	ND (10)	-	-	-	-	-	ND (10)	-	-	-	-	-	-
N-Nitrosopyrrolidine	ND (10)	ND (10)	-	-	-	-	-	-	ND (10)	-	-	-	-	-	-
o,o,o-Triethylphosphorothioate	ND (50)	ND (50)	-	-	-	-	-	-	ND (50)	-	-	-	-	-	-
P-DIMETHYLAMINOAZOBENZENE	ND (20)	ND (20)	-	-	-	-	-	-	ND (20)	-	-	-	-	-	-
Pentachlorobenzene	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachloroethane	-	-	-	-	-	-	-	-	ND (50)	-	-	-	-	-	-
Pentachloronitrobenzene	-	-	ND (50)	-	-	-	-	-	-	ND (50)	ND (50) J	ND (50)	ND (50)	ND (50)	ND (50)
Pentachlorophenol	-	-	ND (10)	-	-	-	ND (10)	-	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
Phenacetin	ND (20)	ND (20)	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	-	-	ND (10)	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
Phenol	-	-	ND (10)	-	ND (10)	ND (10)	ND (10)	-	ND (10)	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
Phorate	ND (50)	ND (50)	-	-	-	-	-	-	ND (50)	-	-	-	-	-	-
p-Phenylenediamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pronamide	ND (20)	ND (20)	-	-	-	-	-	-	ND (20)	-	-	-	-	-	-
Pyrene	-	-	ND (10)	-	ND (10)	ND (10)	ND (10)	-	-	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)	ND (10)
Pyridine	-	-	ND (20)	-	-	-	-	-	ND (20)	ND (20)	ND (20) J	ND (20)	ND (20)	ND (20)	ND (20)
Safrole	-	-	ND (20)	-	-	-	-	-	-	ND (20)	ND (20) J	ND (20)	ND (20)	ND (20)	ND (20)
Sulfotep	ND (50)	ND (50)	-	-	-	-	-	-	ND (50)	-	-	-	-	-	-
Thionazin	-	-	ND (50)	-	-	-	-	-	-	ND (50)	ND (50) J	ND (50)	ND (50)	ND (50)	ND (50)
Volatile Organic Compounds (ug/L)															
1,1,1,2-Tetrachloroethane	-	-	ND (1)	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	-	-	ND (1)	-	-	-	ND (1)	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	-	-	ND (1)	-	ND (5)	ND (5)	-	ND (1)	ND (1)	-	-	-	-	-	-
1,1,2-Trichloroethane	-	-	ND (1)	-	ND (5)	ND (5)	-	ND (1)	ND (1)	-	-	-	-	-	-
1,1-Dichloroethane	-	-	ND (1)	-	ND (5)	ND (5)	-	ND (1)	-	-	-	-	-	-	-
1,1-Dichloroethene	ND (1)	ND (1)	-	-	-	-	ND (1)	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
1,2,3-Trichloropropane	ND (1)	ND (1)	-	-	-	-	-	-	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
1,2-Dibromo-3-chloropropane (DBCP)	-	-	ND (2)	-	-	-	-	-	ND (2)	-	-	-	-	-	-
1,2-Dibromoethane (Ethylene Dibromide)	-	-	ND (1)	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	ND (1)	ND (1)	-	-	-	-	-	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
1,2-Dichloroethene (total)	-	-	-	-	-	-	ND (1)	-	-	-	-	-	-	-	-
1,2-Dichloropropane	-	-	ND (1)	-	ND (5)	ND (5)	-	ND (1)	ND (1)	-	-	-	-	-	-

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	IMW-03-00008D	IMW-03-00008D	IMW-03-00008D	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S
	8/25/2014 Primary	9/1/2015 Primary	9/20/2016 Primary	10/21/1998 Primary	11/19/1999 Primary	10/19/2000 Primary	7/10/2001 Primary	7/10/2002 Primary	6/23/2003 Primary	11/10/2004 Primary	4/19/2005 Primary	10/12/2005 Primary	7/12/2006 Primary	6/18/2007 Primary	11/27/2007 Primary
1,4-Dioxane	-	-	-	-	-	-	-	-	ND (20)	-	-	-	-	-	-
2-Butanone (Methyl Ethyl Ketone)	ND (10)	ND (10)	ND (10)	-	-	-	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2-Chloroethyl vinyl ether	-	-	-	-	ND (50)	ND (50)	-	-	-	-	-	-	-	-	-
2-Hexanone	ND (10)	ND (10)	-	-	-	-	ND (10)	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	ND (10)	ND (10)	ND (10)	-	-	-	ND (10)	-	ND (10)	ND (10)	ND (10)	ND (10) J	ND (10)	ND (10)	ND (10)
Acetone	ND (10)	ND (10)	ND (10)	-	ND (10)	ND (10)	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Acetonitrile	ND (20)	ND (20)	-	-	-	-	-	-	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)
Acrolein	ND (20)	ND (20)	-	-	-	-	-	-	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)
Acrylonitrile	ND (20)	ND (20)	-	-	-	-	-	-	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)
Allyl chloride	-	-	ND (2)	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	ND (1)	ND (1)	-	ND (17)	ND (5)	ND (5)	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Bromodichloromethane	ND (1)	ND (1)	-	-	-	-	ND (1)	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1) J
Bromoform	-	-	ND (1)	-	ND (5)	ND (5)	-	ND (1)	-	-	-	-	-	-	-
Bromomethane (Methyl Bromide)	ND (1) J	ND (1)	-	-	ND (10)	ND (10)	-	ND (1)	ND (1)	ND (1)	**0.38 JB**	ND (1)	ND (1)	ND (1)	ND (1)
Carbon disulfide	**1.1**	ND (1)	ND (1)	-	-	-	ND (1)	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Carbon tetrachloride	-	-	ND (1)	-	ND (5)	ND (5)	-	ND (1)	-	-	-	-	-	-	-
Chlorobenzene	ND (1)	ND (1)	-	-	-	-	ND (1)	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Chloroethane	ND (1) J	ND (1)	-	-	ND (10)	ND (10)	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Chloroform (Trichloromethane)	-	-	ND (1)	-	-	-	ND (1)	-	-	-	-	-	-	-	-
Chloromethane (Methyl Chloride)	-	-	ND (1)	-	-	-	ND (1)	-	-	-	-	-	-	-	-
Chloroprene	ND (2)	ND (2)	-	-	-	-	-	-	-	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
cis-1,2-Dichloroethene	-	-	ND (1)	-	ND (5)	ND (5)	-	-	-	-	-	-	-	-	-
cis-1,3-Dichloropropene	-	-	ND (1)	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	ND (1)	ND (1)	-	-	-	-	-	ND (1)	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Dibromomethane	-	-	ND (1)	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane (CFC-12)	ND (1) J	ND (1)	-	-	-	-	-	-	ND (1)	ND (1) J	ND (1) J	ND (1)	ND (1)	ND (1) J	ND (1)
Ethyl methacrylate	-	-	ND (1)	-	-	-	-	-	ND (1)	-	-	-	-	-	-
Ethylbenzene	-	-	ND (1)	ND (8.2)	-	-	-	-	-	-	-	-	-	-	-
Iodomethane	ND (1)	ND (1)	-	-	-	-	-	-	ND (1)	ND (1)	1 R	ND (1)	ND (1)	ND (1)	ND (1)
Isobutyl alcohol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acrylonitrile	-	-	ND (2)	-	-	-	-	-	ND (2)	-	-	-	-	-	-
Methyl methacrylate	ND (2)	ND (2)	-	-	-	-	-	-	-	ND (2)	ND (2)	ND (2)	ND (2)	ND (2) J	ND (2)
Methylene chloride	-	-	ND (1)	-	ND (5)	ND (5)	-	ND (1)	-	-	-	-	-	-	-
Naphthalene	-	-	-	ND (17)	-	-	-	-	-	-	-	-	-	-	-
Propionitrile (Ethyl cyanide)	-	-	4 R	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	ND (1)	ND (1)	-	-	ND (5)	ND (5)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1) J	ND (1)	ND (1)	ND (1)	ND (1)
Tetrachloroethene	-	-	ND (1)	ND (16)	ND (5)	ND (5)	ND (1)	-	ND (1)	-	-	-	-	-	-
Toluene	-	-	ND (1)	-	ND (5)	ND (5)	-	ND (1)	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	ND (0.5)	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,3-Dichloropropene	ND (1)	ND (1)	-	-	ND (5)	ND (5)	ND (1)	ND (1)	ND (1)	ND (1) J	ND (1)	ND (1)	ND (1)	ND (1) J	ND (1)
trans-1,4-Dichloro-2-butene	-	-	ND (1)	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	ND (1)	ND (1)	-	-	-	-	ND (1)	-	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Trichlorofluoromethane (CFC-11)	-	-	ND (1)	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl acetate	-	-	ND (2)	-	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-
Vinyl chloride	-	-	ND (1)	-	-	-	ND (1)	-	-	-	-	-	-	-	-
Xylene (total)	ND (1)	ND (1)	-	-	-	-	-	ND (1)	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)

Notes and abbreviations on last page

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	P-02A	P-02A	P-02B	P-02B	P-02B
	9/30/2008 Primary	8/11/2009 Primary	10/12/2010 Primary	9/20/2011 Primary	10/1/2012 Primary	9/23/2013 Primary	8/25/2014 Primary	9/1/2015 Primary	9/20/2016 Primary	10/30/1990 Primary	3/20/1991 Primary	10/31/1990 Primary	3/20/1991 Primary	7/29/1996 Primary
Inorganic Compounds (ug/L)														
Antimony, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic, Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic, Total	-	-	-	-	-	-	-	-	-	-	-	92 [E]	22 [E]	-
Barium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium, Total	-	-	-	-	-	-	-	-	-	**21**	-	38 [C]	-	-
Cobalt, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper, Total	-	-	-	-	-	-	-	-	-	-	-	20 [C]	-	-
Cyanide	-	-	-	-	-	-	-	-	-	-	-	650 [C]	-	-
Iron, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead, Dissolved	-	-	-	-	-	-	-	-	-	**45**	ND (5)	-	-	-
Lead, Total	-	-	-	-	-	-	-	-	-	-	-	63 [F]	**16**	-
Magnesium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thallium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc, Total	-	-	-	-	-	-	-	-	-	**70**	-	**180**	-	-
Other (ug/L)														
Ammonia (as N)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness as CaCO3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH (lab) (pH units)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfide	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Dissolved Solids (TDS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total phenols	-	-	-	-	-	-	-	-	-	-	-	**150**	-	-
Total Suspended Solids (TSS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PCBs (ug/L)														
4,4'-DDD	-	-	-	-	-	-	-	-	-	-	-	ND (0.05)	-	-
4,4'-DDT	-	-	-	-	-	-	-	-	-	-	-	ND (0.05)	-	-
alpha-BHC	-	-	-	-	-	-	-	-	-	-	-	ND (0.03)	-	-
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	ND (1)	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	ND (1)	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	ND (1)	-	-
delta-BHC	-	-	-	-	-	-	-	-	-	-	-	ND (0.05)	-	-
Endosulfan	-	-	-	-	-	-	-	-	-	-	-	ND (0.05)	-	-
Endrin	-	-	-	-	-	-	-	-	-	-	-	ND (0.06)	-	-
Endrin ketone	-	-	-	-	-	-	-	-	-	-	-	ND (0)	-	-
gamma-BHC (Lindane)	-	-	-	-	-	-	-	-	-	-	-	ND (0.04)	-	-
Heptachlor	-	-	-	-	-	-	-	-	-	-	-	ND (0.03)	-	-
Heptachlor epoxide	-	-	-	-	-	-	-	-	-	-	-	ND (0.05)	-	-
Semi-Volatile Organic Compounds (ug/L)														
1,2,4,5-Tetrachlorobenzene	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
1,2,4-Trichlorobenzene	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
1,2-Dichlorobenzene	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
1,2-Diphenylhydrazine	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3,5-Trinitrobenzene	ND (50)	ND (50)	ND (50)	-	-	ND (50)	-	-	ND (50)	-	-	-	-	-
1,3-Dichlorobenzene	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
1,3-Dinitrobenzene	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
1,4-Dichlorobenzene	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	-	-
1,4-Naphthoquinone	-	-	-	ND (50)	ND (50)	-	ND (50)	ND (50)	-	-	-	-	-	-

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	P-02A	P-02A	P-02B	P-02B	P-02B
	9/30/2008 Primary	8/11/2009 Primary	10/12/2010 Primary	9/20/2011 Primary	10/1/2012 Primary	9/23/2013 Primary	8/25/2014 Primary	9/1/2015 Primary	9/20/2016 Primary	10/30/1990 Primary	3/20/1991 Primary	10/31/1990 Primary	3/20/1991 Primary	7/29/1996 Primary
1-Naphthylamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2'-oxybis(1-Chloropropane)	-	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	-	-
2,3,4,6-Tetrachlorophenol	ND (50)	ND (50)	ND (50)	-	-	ND (50)	-	-	ND (50)	-	-	-	-	-
2,4,5-Trichlorophenol	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
2,4,6-Trichlorophenol	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
2,4-Dichlorophenol	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
2,4-Dimethylphenol	-	-	-	-	-	-	-	-	ND (10)	-	-	-	-	-
2,4-Dinitrophenol	ND (50)	ND (50)	ND (50)	-	-	ND (50)	-	-	ND (50) J	-	-	-	-	-
2,4-Dinitrotoluene	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
2,6-Dichlorophenol	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
2,6-Dinitrotoluene	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
2-Acetylaminofluorene	ND (100)	ND (100)	ND (100)	-	-	ND (100)	-	-	ND (100)	-	-	-	-	-
2-Chloronaphthalene	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
2-Chlorophenol	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
2-Methylnaphthalene	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
2-Methylphenol (o-Cresol)	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
2-Naphthylamine	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
2-Nitroaniline	ND (50)	ND (50)	ND (50)	-	-	ND (50)	-	-	ND (50)	-	-	-	-	-
2-Nitrophenol	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
2-Picoline	-	-	-	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	-	-	-	-	-	-
2-Toluidine	-	-	-	ND (20)	ND (20)	-	ND (20)	ND (20)	-	-	-	-	-	-
3,3'-Dichlorobenzidine	ND (50)	ND (50)	ND (50)	-	-	ND (50)	-	-	ND (50)	-	-	-	-	-
3,3-Dimethylbenzidine	ND (50)	50 R	50 R	-	-	ND (50)	-	-	ND (50)	-	-	-	-	-
3-Methylcholanthrene	-	-	-	ND (20)	ND (20)	-	ND (20)	ND (20)	-	-	-	-	-	-
3-Methylphenol	ND (10)	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	-	-
3-Nitroaniline	-	-	-	ND (50)	ND (50)	-	ND (50)	ND (50)	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	ND (50)	ND (50)	ND (50)	-	-	ND (50)	-	-	ND (50)	-	-	-	-	-
4-Aminobiphenyl	ND (50)	ND (50)	ND (50)	-	-	ND (50)	-	-	ND (50)	-	-	-	-	-
4-Bromophenyl phenyl ether	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	-	-
4-Chloro-3-methylphenol	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
4-Chloroaniline	-	-	-	-	-	-	-	-	ND (10)	-	-	-	-	-
4-Chlorophenyl phenyl ether	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
4-Methylphenol	-	-	-	-	-	-	-	-	ND (10)	-	-	-	-	-
4-Nitroaniline	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	-	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-	-	-	-	ND (50)	-	-	-	-	-
4-Nitroquinoline-N-oxide	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-Nitro-2-Toluidine	-	-	-	ND (20)	ND (20)	-	ND (20)	ND (20)	-	-	-	-	-	-
7,12-Dimethylbenz(a)anthracene	-	-	-	ND (20)	ND (20)	-	ND (20)	ND (20)	-	-	-	-	-	-
a,a-Dimethylphenethylamine	-	-	-	50 R	ND (50)	-	ND (50) J	ND (50)	-	-	-	-	-	-
Acenaphthene	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
Acenaphthylene	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
Acetophenone	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	ND (10)	-	-	-	-	-
Aniline	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
Anthracene	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
Aramite	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
Benzo(a)pyrene	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
Benzo(b)fluoranthene	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
Benzo(g,h,i)perylene	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10) J	-	-	-	-	-	-
Benzo(k)fluoranthene	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
Benzoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzyl Alcohol	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
bis(2-Chloroethyl)ether	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate**	-	-	-	ND (10)	**1.7 JB [C]**	-	**4.4 JB [AC]**	**1.7 JB [C]**	ND (10)	-	-	**12 [ACI]**	-	-
Butyl benzylphthalate	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
Carbazole	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzilate	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
Chrysene	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
Diallate	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
Dibenz(a,h)anthracene	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
Dibenzofuran	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	P-02A	P-02A	P-02B	P-02B	P-02B
	9/30/2008 Primary	8/11/2009 Primary	10/12/2010 Primary	9/20/2011 Primary	10/1/2012 Primary	9/23/2013 Primary	8/25/2014 Primary	9/1/2015 Primary	9/20/2016 Primary	10/30/1990 Primary	3/20/1991 Primary	10/31/1990 Primary	3/20/1991 Primary	7/29/1996 Primary
Diethyl phthalate	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
Dimethoate	-	-	-	ND (20)	ND (20)	-	ND (20)	ND (20)	-	-	-	-	-	-
Dimethyl phthalate	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
Di-n-butylphthalate	-	-	-	ND (10)	**0.7 J**	-	ND (10)	**1.5 JB**	**0.44 JB**	-	-	-	-	-
Di-n-octyl phthalate	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
Dinoseb	ND (20)	ND (20)	ND (20)	-	-	ND (20)	-	-	ND (20)	-	-	-	-	-
Diphenylamine	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
Disulfoton	ND (50)	ND (50)	ND (50)	-	-	ND (50)	-	-	ND (50)	-	-	-	-	-
Ethyl methanesulfonate	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
Famphur	-	-	-	10 R	10 R	-	10 R	10 R	-	-	-	-	-	-
Fluoranthene	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
Fluorene	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
Hexachlorobenzene	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
Hexachlorobutadiene	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
Hexachlorocyclopentadiene	ND (50)	ND (50)	ND (50)	-	-	50 R	-	-	ND (50)	-	-	-	-	-
Hexachloroethane	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
Hexachloropropene	ND (100)	ND (100)	ND (100)	-	-	ND (100)	-	-	ND (100)	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
Isophorone	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
Isosafrole	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methapyrilene	-	-	-	ND (50)	ND (50)	-	ND (50)	ND (50)	-	-	-	-	-	-
Methyl methanesulfonate	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
Naphthalene	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
Nitrobenzene	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
N-Nitrosodiethylamine	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
N-Nitrosodimethylamine	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10) J	-	-	-	-	-
N-Nitrosodi-N-butylamine	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
N-Nitrosodiphenylamine	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
N-Nitrosomethylethylamine	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	-	-
N-Nitrosomorpholine	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
N-Nitrosopiperidine	-	-	-	-	-	-	-	-	ND (10)	-	-	-	-	-
N-Nitrosopyrrolidine	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
o,o,o-Triethylphosphorothioate	-	-	-	ND (50)	ND (50)	-	ND (50)	ND (50)	-	-	-	-	-	-
P-DIMETHYLAMINOAZOBENZENE	-	-	-	ND (20)	ND (20)	-	ND (20)	ND (20)	-	-	-	-	-	-
Pentachlorobenzene	-	-	-	ND (10)	ND (10)	-	ND (10)	ND (10)	-	-	-	-	-	-
Pentachloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachloronitrobenzene	ND (50)	ND (50)	ND (50)	-	-	ND (50)	-	-	ND (50)	-	-	-	-	-
Pentachlorophenol	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
Phenacetin	-	-	-	ND (20)	ND (20)	-	ND (20)	ND (20)	-	-	-	-	-	-
Phenanthrene	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-
Phenol	ND (10)	ND (10)	ND (10)	-	-	-	-	-	ND (10)	-	-	**88**	-	-
Phorate	-	-	-	ND (50)	ND (50)	-	ND (50)	ND (50)	-	-	-	-	-	-
p-Phenylenediamine	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pronamide	-	-	-	ND (20)	ND (20)	-	ND (20)	ND (20)	-	-	-	-	-	-
Pyrene	ND (10)	ND (10)	ND (10)	-	-	ND (10)	-	-	ND (10)	-	-	-	-	-
Pyridine	ND (20)	ND (20)	ND (20)	-	-	ND (20)	-	-	ND (20)	-	-	-	-	-
Safrole	ND (20)	ND (20)	ND (20)	-	-	ND (20)	-	-	ND (20)	-	-	-	-	-
Sulfotep	-	-	-	ND (50)	ND (50)	-	ND (50)	ND (50)	-	-	-	-	-	-
Thionazin	ND (50)	ND (50)	ND (50)	-	-	ND (50)	-	-	ND (50)	-	-	-	-	-
Volatile Organic Compounds (ug/L)														
1,1,1,2-Tetrachloroethane	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-	-
1,1,1-Trichloroethane	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-	-
1,1,2,2-Tetrachloroethane	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-	-
1,1,2-Trichloroethane	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-	-
1,1-Dichloroethane	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-	-
1,1-Dichloroethene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	-	-	-	-	-	-
1,2,3-Trichloropropane	ND (1)	ND (1)	ND (1) J	ND (1)	ND (1) J	ND (1)	ND (1)	ND (1)	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane (DBCP)	-	-	-	-	-	-	-	-	ND (2)	-	-	-	-	-
1,2-Dibromoethane (Ethylene Dibromide)	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-	-
1,2-Dichloroethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1) J	ND (1)	ND (1)	ND (1)	-	-	-	-	-	-
1,2-Dichloroethene (total)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-	-

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	IMW-03-00008S	P-02A	P-02A	P-02B	P-02B	P-02B
	9/30/2008 Primary	8/11/2009 Primary	10/12/2010 Primary	9/20/2011 Primary	10/1/2012 Primary	9/23/2013 Primary	8/25/2014 Primary	9/1/2015 Primary	9/20/2016 Primary	10/30/1990 Primary	3/20/1991 Primary	10/31/1990 Primary	3/20/1991 Primary	7/29/1996 Primary
1,4-Dioxane	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Butanone (Methyl Ethyl Ketone)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	-	-
2-Chloroethyl vinyl ether	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	-	-
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	-	-	-
Acetone	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	**1.6 JB**	ND (10)	ND (10)	ND (10)	-	-	-	-	-
Acetonitrile	ND (20)	ND (20)	ND (20)	ND (20)	ND (20) J	ND (20) J	ND (20)	ND (20)	-	-	-	-	-	-
Acrolein	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20) J	ND (20)	ND (20)	-	-	-	-	-	-
Acrylonitrile	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	-	-	-	-	-	-
Allyl chloride	-	-	-	-	-	-	-	-	ND (2)	-	-	-	-	-
Benzene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	-	-	-	**98000** [ABCE]	-	**4300** [ABCE]
Bromodichloromethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	-	-	-	-	-	-
Bromoform	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-	-
Bromomethane (Methyl Bromide)	ND (1)	ND (1) J	ND (1)	ND (1)	ND (1)	ND (1)	ND (1) J	ND (1)	ND (1)	-	-	-	-	-
Carbon disulfide	ND (1)	ND (1)	ND (1)	**0.17 JB**	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	-	-	-	-	-
Carbon tetrachloride	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-	-
Chlorobenzene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	-	-	-	-	-	-
Chloroethane	ND (1)	ND (1)	ND (1)	ND (1) J	ND (1) J	ND (1)	ND (1) J	ND (1)	-	-	-	-	-	-
Chloroform (Trichloromethane)	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-	-
Chloromethane (Methyl Chloride)	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-	-
Chloroprene	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	-	-	-	-	-	-
cis-1,2-Dichloroethene	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-	-
cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-	-
Dibromochloromethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	-	-	-	-	-	-
Dibromomethane	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-	-
Dichlorodifluoromethane (CFC-12)	ND (1)	ND (1) J	ND (1)	ND (1)	ND (1)	ND (1)	ND (1) J	ND (1)	-	-	-	-	-	-
Ethyl methacrylate	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-	-
Ethylbenzene	-	-	-	-	-	-	-	-	ND (1)	-	-	ND (5)	-	**9.3**
Iodomethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	-	-	-	-	-	-
Isobutyl alcohol	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acrylonitrile	-	-	-	-	-	-	-	-	ND (2)	-	-	-	-	-
Methyl methacrylate	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	-	-	-	-	-	-
Methylene chloride	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-	-
Naphthalene	-	-	-	-	-	-	-	-	-	-	-	**230** [C]	-	**22**
Propionitrile (Ethyl cyanide)	-	-	-	-	-	-	-	-	4 R	-	-	-	-	-
Styrene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	-	-	-	-	-	-
Tetrachloroethene	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-	ND (16)
Toluene	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-	ND (10)
trans-1,2-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	-
trans-1,3-Dichloropropene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	-	-	-	-	-	-
trans-1,4-Dichloro-2-butene	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-	-
Trichloroethene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	-	-	-	-	-	ND (15)
Trichlorofluoromethane (CFC-11)	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-	-
Vinyl acetate	-	-	-	-	-	-	-	-	ND (2)	-	-	-	-	-
Vinyl chloride	-	-	-	-	-	-	-	-	ND (1)	-	-	-	-	-
Xylene (total)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	-	-	-	-	-	ND (17)

Notes and abbreviations on last page

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

Notes and abbreviations

1: Phase II RFI Tier 1A Groundwater Screening Criteria cited in Phase II RFI-ISA Report (AECOM) based on IDEM Ambient Surface Water Criteria (ASWQC), for human exposures to non-drinking water sources (December 2002)
2: Phase II RFI Tier 1A Groundwater Screening Criteria cited in Phase II RFI-ISA Report (AECOM) based on IDEM ASWQC, for chronic exposure of aquatic life to surface water (2002)
3: Phase II RFI Tier 1A Groundwater Screening Criteria cited in Phase II RFI-ISA Report (AECOM) based on IDEM Regulations (327 IAC 2-1.5-8(b)(6)) and are 30-day average criteria
4: Phase II RFI Tier 1A Groundwater Screening Criteria cited in Phase II RFI-ISA Report (AECOM) based on IDEM RISC Default Closure Values for Industrial Exposure Scenarios (2006)
5: Criteria based on Chromium VI
6: Tier 1B Default Risk Criteria cited in Phase II RFI-FPA Report (AECOM) based on, in priority of order, IDEM ambient surface water quality criteria and U.S. EPA National Recommended Water Quality Criteria, and U.S. EPA Ecological Screening Levels multiplied by the FPA Default Dilution factor of 10.
A: Indicates result is greater than Tier1A Groundwater to Surface Water - Human Carcinogen
B: Indicates result is greater than Tier1A Groundwater to Surface Water - Human Non-Carcinogen
C: Indicates result is greater than Tier1A Groundwater to Surface Water - Ecological Receptors
D: Indicates result is greater than Tier1A Groundwater to Surface Water - Wildlife
E: Indicates result is greater than Tier1A Exposure to Groundwater - Industrial Carcinogen
F: Indicates result is greater than Tier1A Exposure to Groundwater - Industrial Non-Carcinogen
G: Facility Parameter Area sample result is greater than Tier 1B Default Screening Criteria
H: Facility Parameter Area sample result is greater than Tier 1B Non-Default Screening Criteria
I: Facility Parameter Area sample result is greater than Tier 1B Default Screening Criteria Ecological

IHSC: Indiana Harbor Shipping Canal
J: Estimated value. All results reported are less than the DL, but greater than the MDL.
JB: Suspected lab contaminant, not expected to be present in sample.
R: Data rejected in accordance with established data validation acceptance criteria.
** Common lab contaminant

TABLE 2
SAMPLING SUMMARY BY INVESTIGATION AREA
INDIANA HARBOR LONG CARBON
EAST CHICAGO, IN

Investigation Area	Sample ID	Purpose	Dates Sampled	Constituents of Concern
SWMA 2	P-02A	Piezometer (abandoned)	10/30/1990, 3/21/1991	Inorganic Compounds
SWMA 2	IFW-02-00001	First Water Sample	4/28/1998	BTEX, Naphthalene, TCE, and PCE
SWMA 2	IFW-02-00002	Piezometer	5/1/1998	BTEX, Naphthalene, TCE, and PCE
SWMA 2	IFW-02-00003 IMW-02-00003	2" Metals Well	5/1/1998	Inorganic Compounds, BTEX, Naphthalene, TCE, and PCE
SWMA 2	IFW-02-00004	Piezometer	4/22/1998	BTEX, Naphthalene, TCE, and PCE
SWMA 2	IFW-02-00005	Piezometer	4/28/1998	BTEX, Naphthalene, TCE, and PCE
SWMA 2	IFW-02-00006	Piezometer	4/21/1998	BTEX, Naphthalene, TCE, and PCE
SWMA 2	IFW-02-00007	First Water Sample	4/21/1998	BTEX, Naphthalene, TCE, and PCE
SWMA 2	IFW-02-00008	Piezometer	4/21/1998	BTEX, Naphthalene, TCE, and PCE
SWMA 2	IFW-02-00009	First Water Sample	4/14/1998	BTEX, Naphthalene, TCE, and PCE
SWMA 2	IFW-02-00010	Piezometer	4/24/1998	BTEX, Naphthalene, TCE, and PCE
SWMA 2	IFW-02-00011	Piezometer	4/15/1998	BTEX, Naphthalene, TCE, and PCE
SWMA 2	IFW-02-00012	First Water Sample	4/23/1998	BTEX, Naphthalene, TCE, and PCE
SWMA 2	IFW-02-00013	Piezometer	4/23/1998	BTEX, Naphthalene, TCE, and PCE
SWMA 2	IFW-02-00014	Piezometer	4/23/1998	BTEX, Naphthalene, TCE, and PCE
SWMA 2	IFW-02-00015	First Water Sample	4/17/1998	BTEX, Naphthalene, TCE, and PCE
SWMA 2	IFW-02-00016	Piezometer	4/15/1998	BTEX, Naphthalene, TCE, and PCE
SWMA 2	IFW-02-00017	Piezometer	4/14/1998	BTEX, Naphthalene, TCE, and PCE
SWMA 2	IFW-02-00018 IMW-02-00001	2" Metals Well	4/29/1998	Inorganic Compounds, BTEX, Naphthalene, TCE, and PCE
SWMA 2	IFW-02-00019	First Water Sample	4/10/1998	BTEX, Naphthalene, TCE, and PCE
SWMA 2	IFW-02-00020 IMW-02-00002	2" Metals Well	4/29/1998	Inorganic Compounds, BTEX, Naphthalene, TCE, and PCE
SWMA 2	IFW-02-00021	Piezometer	4/23/1998	BTEX, Naphthalene, TCE, and PCE
SWMA 2	IFW-02-00022	Piezometer	4/21/1998	BTEX, Naphthalene, TCE, and PCE
SWMA 2	IFW-02-00023	First Water Sample	9/28/1998	BTEX, Naphthalene, TCE, and PCE
SWMA 2	IFW-02-00024	First Water Sample	9/29/1998	BTEX, Naphthalene, TCE, and PCE
SWMA 2	IFW-02-00025	First Water Sample	9/29/1998	BTEX, Naphthalene, TCE, and PCE
SWMA 2/ FIA 6	IMW-02-0004D	Unknown	1/10/2008, 6/10/2009	Inorganic Compounds, SVOCs, VOCs
SWMA 2/ FIA 6	IMW-02-0004S	Unknown	1/10/2008, 6/10/2009	Inorganic Compounds, SVOCs, VOCs

TABLE 2
SAMPLING SUMMARY BY INVESTIGATION AREA
INDIANA HARBOR LONG CARBON
EAST CHICAGO, IN

Investigation Area	Sample ID	Purpose	Dates Sampled	Constituents of Concern
SWMA 3	P-02B	Preliminary Assessment	10/31/1990, 3/20/1991	Inorganic Compounds, Limited VOCs, PCBs
SWMA 3	IFW-03-00001	Piezometer	7/8/1996	BTEX, Naphthalene, TCE, and PCE
SWMA 3	IFW-03-00002	Piezometer	7/8/1996	BTEX, Naphthalene, TCE, and PCE
SWMA 3	IFW-03-00004	First Water Sample	7/10/1996	BTEX, Naphthalene, TCE, and PCE
SWMA 3	IFW-03-00008	First Water Sample	7/12/1996, 8/12/1996, 8/27/1996, 9/3/1996	BTEX, Naphthalene, TCE, and PCE
SWMA 3	IFW-03-00014	First Water Sample	7/11/1996	BTEX, Naphthalene, TCE, and PCE
SWMA 3	IFW-03-00015	First Water Sample	7/9/1996	BTEX, Naphthalene, TCE, and PCE
SWMA 3	IFW-03-00018	Piezometer	7/10/1996	BTEX, Naphthalene, TCE, and PCE
SWMA 3	IFW-03-00019	First Water Sample	7/8/1996	BTEX, Naphthalene, TCE, and PCE
SWMA 3	IFW-03-00023	First Water Sample	7/24/1996	BTEX, Naphthalene, TCE, and PCE
SWMA 3	IFW-03-00029	First Water Sample	7/22/1996, 8/26/1996	BTEX, Naphthalene, TCE, and PCE
SWMA 3	IFW-03-00029A	First Water Sample	8/8/1996	BTEX, Naphthalene, TCE, and PCE
SWMA 3	IFW-03-00029B	First Water Sample	8/8/1996	BTEX, Naphthalene, TCE, and PCE
SWMA 3	IFW-03-00029C	First Water Sample	8/8/1996	BTEX, Naphthalene, TCE, and PCE
SWMA 3	IFW-03-00029D	First Water Sample	8/8/1996	BTEX, Naphthalene, TCE, and PCE
SWMA 3	IFW-03-00029E	First Water Sample	8/8/1996	BTEX, Naphthalene, TCE, and PCE
SWMA 3	IMW-03-00004	Temporary Monitoring Well	1996 - Present	BTEX, Naphthalene, TCE, and PCE
SWMA 3	IFW-03-00031	First Water Sample	7/30/1996, 8/30/1996	BTEX, Naphthalene, TCE, and PCE
SWMA 3	IFW-03-00032	First Water Sample	8/6/1996	BTEX, Naphthalene, TCE, and PCE
SWMA 3	IFW-03-00038	First Water Sample	9/3/1996	BTEX, Naphthalene, TCE, and PCE
SWMA 3	IMW-03-00007	Temporary Monitoring Well	8/8/1996, 8/14/1996, 9/23/2004, 12/1/2004	BTEX, Naphthalene, TCE, and PCE

TABLE 2
SAMPLING SUMMARY BY INVESTIGATION AREA
INDIANA HARBOR LONG CARBON
EAST CHICAGO, IN

Investigation Area	Sample ID	Purpose	Dates Sampled	Constituents of Concern
FPA 6/ISA 3	IMW-03-0008D	Deep Monitoring Well	1999 - Present	Inorganic compounds, SVOCs, VOCs, water quality parameters[1]
FPA 6/ISA 3	IMW-03-0008S	Shallow Monitoring Well	1999 - Present	Inorganic compounds, SVOCs, VOCs, water quality parameters[1]

Notes and abbreviations:
1: ammonia, chloride, hardness, pH, sulfate, sulfide, total dissolved solids, total phenols, total suspended solids

COC: Chemical of Concern
VOCs: Volatile Organic Compounds
TPH: Total Petroleum Hydrocarbons
BTEX: Benzene, Toluene, Ethylbenzene, Xylenes
SVOC: Semi-Volatile Organic Compounds
PCBs: Polychlorinated Biphenyls
TCE: Trichloroethene
PCE: Tetrachloroethene

TABLE 3
SUMMARY OF EXCEEDANCES IN GROUNDWATER
ARCELORMITTAL - INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

			Groundwater to Surface Water Discharge Exposure Pathway						Industrial/Commercial Exposure to Groundwater		
			Human Receptors				Ecological Receptors	Wildlife			
Sample Location	Date	Analyte	Tier 1A Carcinogen [A]	Tier 1 A Non-Carcinogen [A]	Tier 1B Default [B]	Tier 1 B Non-Default [B]	Tier 1A [C] Tier 1B [B]	Tier 1A [D]	Tier 1A Carcinogen [E]	Tier 1A Non-Carcinogen [E]	Current Status
P-02B	3/20/1991	Arsenic (total)							X		Potential exposures will be controlled through the implementation of institutional and/engineering controls.
	10/31/1990	Chromium (total)					X				Although there are no current data, these analytes were not detected at concentrations greater than Tier 1A Ecological Screening Criteria in downgradient monitoring wells. There are no ecological receptors on-site.
	10/31/1990	Copper (total)					X				
	10/31/1990	Cyanide					X				
	7/29/1996	Benzene	X	X			X		X		Benzene was not detected at concentrations greater Tier 1A Screening Criteria for subsequent sampling events in nearby monitoring well IMW-03-00004.
IFW-02-00003	5/1/1998	Iron (total)		X	X						Analytes were not detected at concentrations in excess of Tier 1B Default and/or Tier 1B Non-Default screening criteria for off-site human receptors.
IMW-02-00003		Manganese (total)		X	X						
IFW-02-00013	5/6/1998	Tetrachloroethene (PCE)	X				X		X		Groundwater impacts subsequently assessed in IMW-02-00004S/D; PCE concentrations did not exceed Tier 1A Screening Criteria.
IFW-02-00018	4/23/1998	Iron (total)		X			X				Potential impacts are applicable to off-site receptors and this potential pathway would be assessed in FPA monitoring wells or downgradient monitoring wells.
		Manganese (total)		X							
IFW-02-00022	4/21/1998	Naphthalene					X				Although there are no current data, naphthalene was not detected at a concentration greater than Tier 1A Ecological Screening Criteria in downgradient monitoring wells. There are no ecological receptors on-site.
IFW-02-00023	9/28/1998	Tetrachloroethene	X				X		X		Concentrations of TCE and PCE were not detected greater than Tier 1A Screening Criteria during subsequent sampling events in nearby monitoring well IMW-03-00004
		Trichloroethene (TCE)								X	
IMW-02-00004D	6/10/2009	Iron (total)		X			X				Potential impacts are applicable to off-site receptors and this potential pathway would be assessed in FPA monitoring wells or downgradient monitoring wells.
	6/10/2009	Manganese (total)		X							
	6/10/2009	Ammonia (as N)					X				
IMW-02-00004S	6/10/2009	Vinyl Chloride	X						X		Potential exposures will be controlled through the implementation of institutional and/engineering controls.
IFW-03-00029	8/26/1996	Benzene	X	X			X		X		Concentrations of benzene and naphthalene were not detected greater than Tier 1A Screening Criteria during subsequent sampling events in nearby monitoring well IMW-03-00004.
		Naphthalene					X				
IFW-03-00029C	8/8/1996	Benzene	X	X			X		X		
		Naphthalene					X				
IFW-03-00029E	8/9/1996	Benzene	X	X			X		X		
		Naphthalene					X				
IFW-03-00032	8/6/1996	Naphthalene					X				
IFW-03-00038	9/3/1996	Benzene					X		X		Although there are no current data, current groundwater data from downgradient, nearby monitoring well IMW-03-00008S does not indicate benzene is present in shallow groundwater in excess of Tier 1A Screening Criteria.
IMW-03-0008S	11/27/2007	Iron (total)		X			X				Analytes were not detected at concentrations in excess of Tier 1B Default and/or Tier 1B Non-Default Screening Criteria for off-site human receptors.
	11/27/2007	Manganese (total)		X							
	11/27/2007	Cyanide					X				
IMW-03-0008D	11/27/2007	Iron (total)		X			X				Analytes were not detected at concentrations in excess of Tier 1B Default and/or Tier 1B Non-Default Screening Criteria for off-site human receptors.
	11/27/2007	Manganese (total)		X							
	11/27/2007	Ammonia (as N)					X				
	11/27/2007	Cyanide					X				

Notes and abbreviations:

A: Phase II RFI Tier 1A Groundwater Screening Criteria cited in Phase II RFI-ISA Report (AECOM) based on IDEM Ambient Surface Water Criteria (ASWQC), for human exposures to non-drinking water sources (December 2002)

B: Tier 1B Default Risk Criteria cited in Phase II RFI-FPA Report (AECOM) based on, in priority of order, IDEM ambient surface water quality criteria and U.S. EPA National Recommended Water Quality Criteria, and U.S. EPA Ecological Screening Levels multiplied by the FPA Default Dilution factor of 10.

C: Phase II RFI Tier 1A Groundwater Screening Criteria cited in Phase II RFI-ISA Report (AECOM) based on IDEM ASWQC, for chronic exposure of aquatic life to surface water (2002)

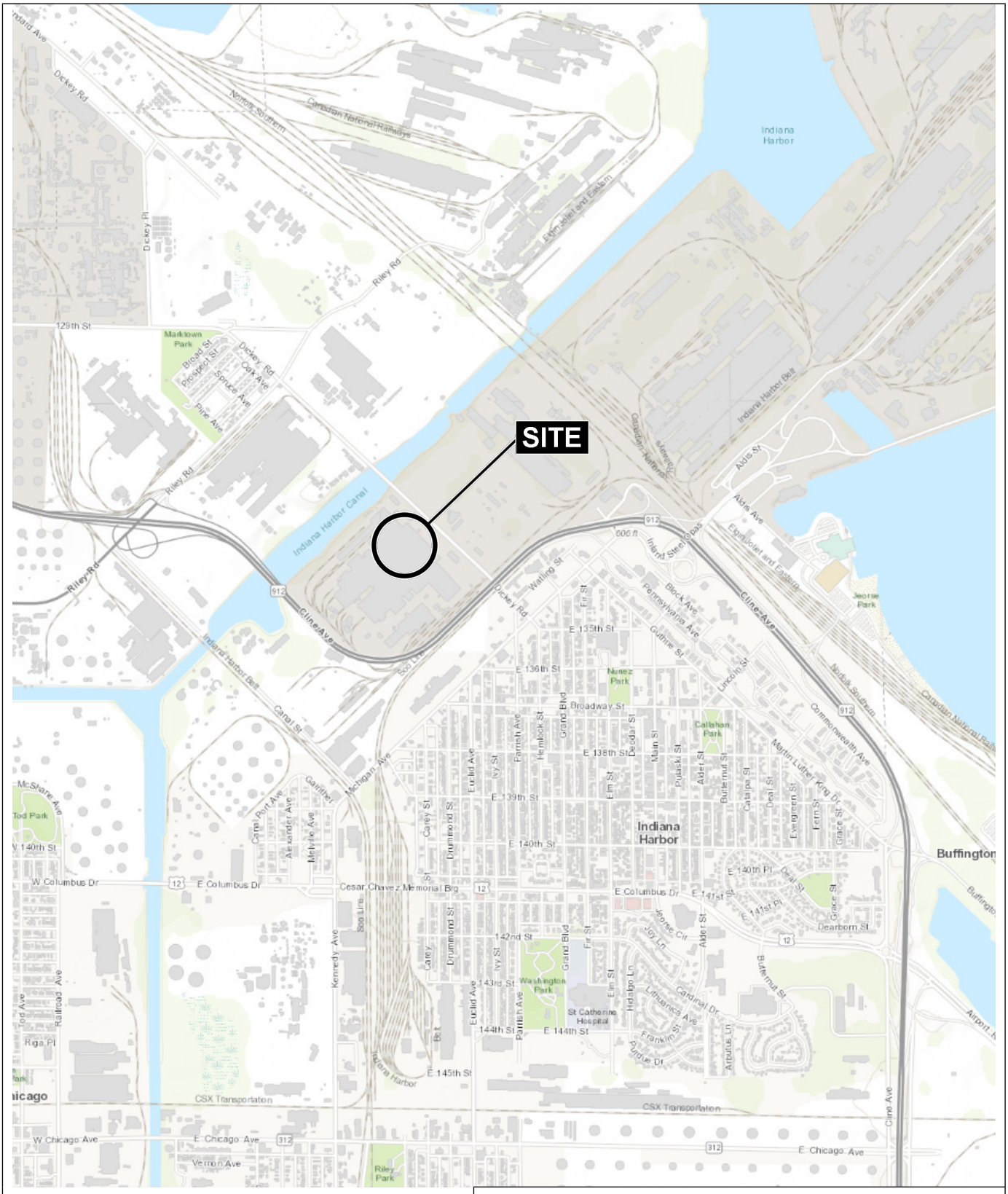
D: Phase II RFI Tier 1A Groundwater Screening Criteria cited in Phase II RFI-ISA Report (AECOM) based on IDEM Regulations (327 IAC 2-1.5-8(b)(6)) and are 30-day average criteria

E: Phase II RFI Tier 1A Groundwater Screening Criteria cited in Phase II RFI-ISA Report (AECOM) based on IDEM RISC Default Closure Values for Industrial Exposure Scenarios (2006)

X: Detection of analyte exceeds applicable Tier 1A and/or Tier 1B Screening Criteria in most recent groundwater data

X: Detection of analyte exceeds applicable Tier 1A screening criteria in most recent groundwater data

FIGURES



MAP SOURCE: ESRI

SITE COORDINATES: 41°39'2"N, 87°27'10"W

HALEY ALDRICH

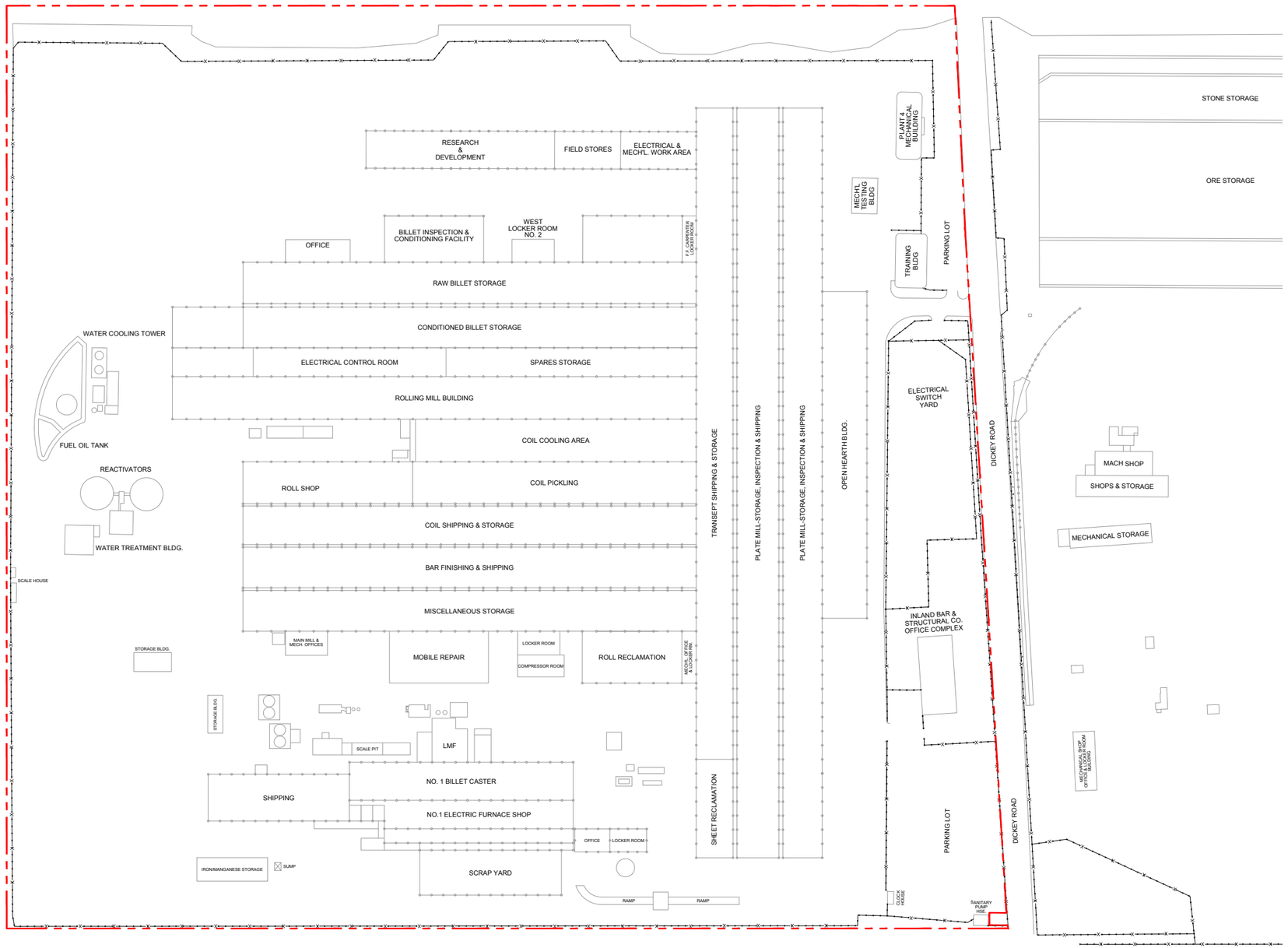
ARCELORMITTAL USA LLC
INDIANA HARBOR LONG CARBON
3300 DICKEY ROAD
EAST CHICAGO, INDIANA

PROJECT LOCUS

APPROXIMATE SCALE: 1 IN = 2000 FT
MAY 2018

FIGURE 1

129719_1_LOCUS.PDF



LEGEND

- FENCE LINE
- COLUMN
- PROPERTY LINE (APPROXIMATE)

NOTES

1. PLAN BASED ON SURVEY AND BASE MAP ENTITLED "UTILITIES_BASE_IHE_2017_V2010.DWG" PROVIDED BY AECOM ON 24 AUGUST 2017.

0 250 500
SCALE IN FEET

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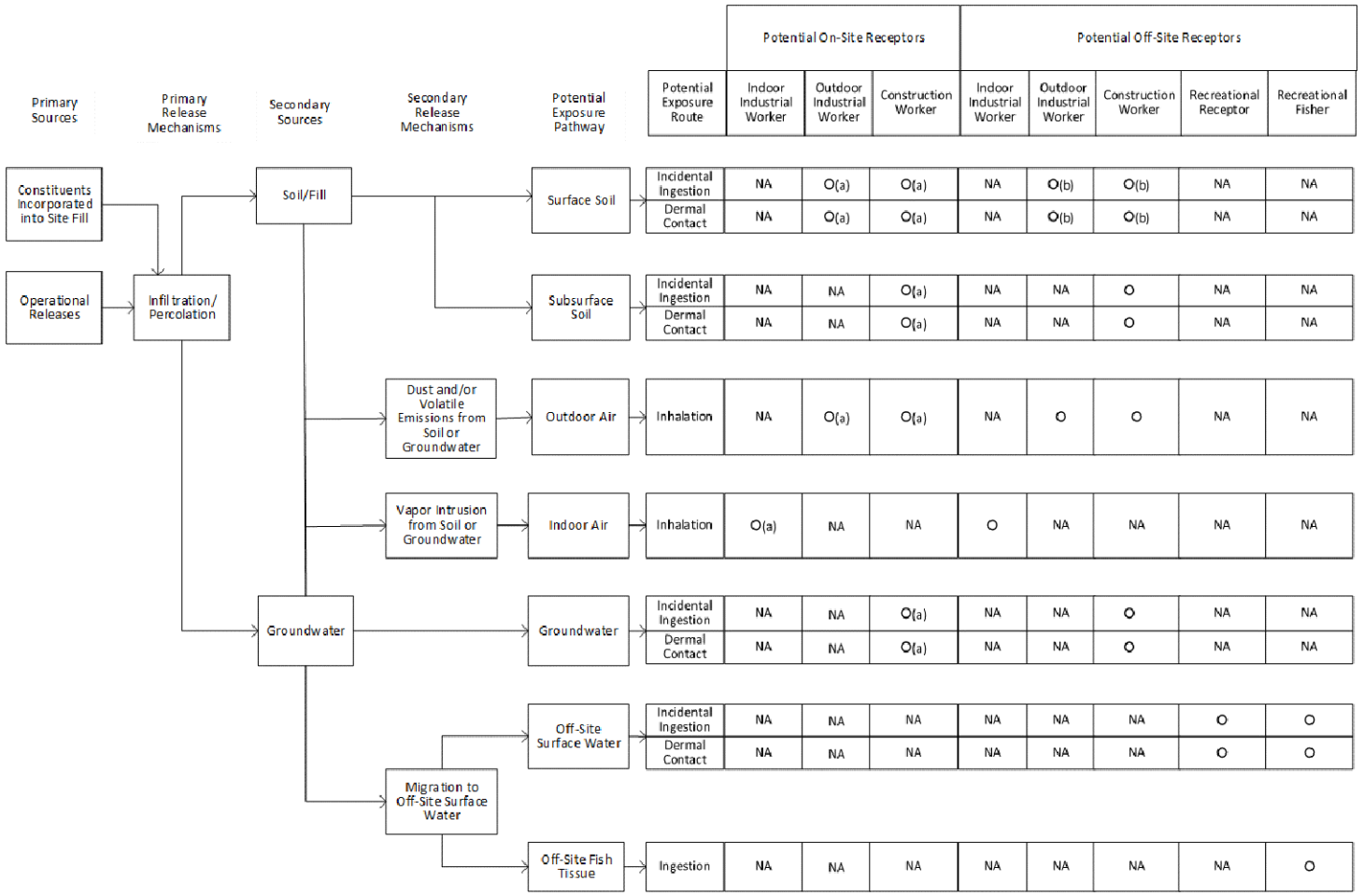
ARCELORMITTAL INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

SITE PLAN

SCALE: AS SHOWN
MAY 2018

FIGURE 2



Potential Exposure Pathway	Potential Exposure Route	Potential On-Site Receptors: Indoor Industrial Worker	Potential On-Site Receptors: Outdoor Industrial Worker	Potential On-Site Receptors: Construction Worker	Potential Off-Site Receptors: Indoor Industrial Worker	Potential Off-Site Receptors: Outdoor Industrial Worker	Potential Off-Site Receptors: Construction Worker	Potential Off-Site Receptors: Recreational Receptor	Potential Off-Site Receptors: Recreational Fisher
Surface Soil	Incidental Ingestion	NA	O(a)	O(a)	NA	O(b)	O(b)	NA	NA
	Dermal Contact	NA	O(a)	O(a)	NA	O(b)	O(b)	NA	NA
Subsurface Soil	Incidental Ingestion	NA	NA	O(a)	NA	NA	O	NA	NA
	Dermal Contact	NA	NA	O(a)	NA	NA	O	NA	NA
Outdoor Air	Inhalation	NA	O(a)	O(a)	NA	O	O	NA	NA
Indoor Air	Inhalation	O(a)	NA	NA	O	NA	NA	NA	NA
Groundwater	Incidental Ingestion	NA	NA	O(a)	NA	NA	O	NA	NA
	Dermal Contact	NA	NA	O(a)	NA	NA	O	NA	NA
Off-Site Surface Water	Incidental Ingestion	NA	NA	NA	NA	NA	NA	O	O
	Dermal Contact	NA	NA	NA	NA	NA	NA	O	O
Off-Site Fish Tissue	Ingestion	NA	NA	NA	NA	NA	NA	NA	O

Key:
O Pathway evaluated and found to be incomplete; no further evaluation recommended.
NA Not Applicable – Receptor not assumed to be potentially exposed via this pathway.
(a) Institutional/Engineering Control Procedures
(b) Surface soil exposures are not complete exposure pathways for off-site receptors because the release mechanism to off-site soils is via groundwater in the saturated zone.

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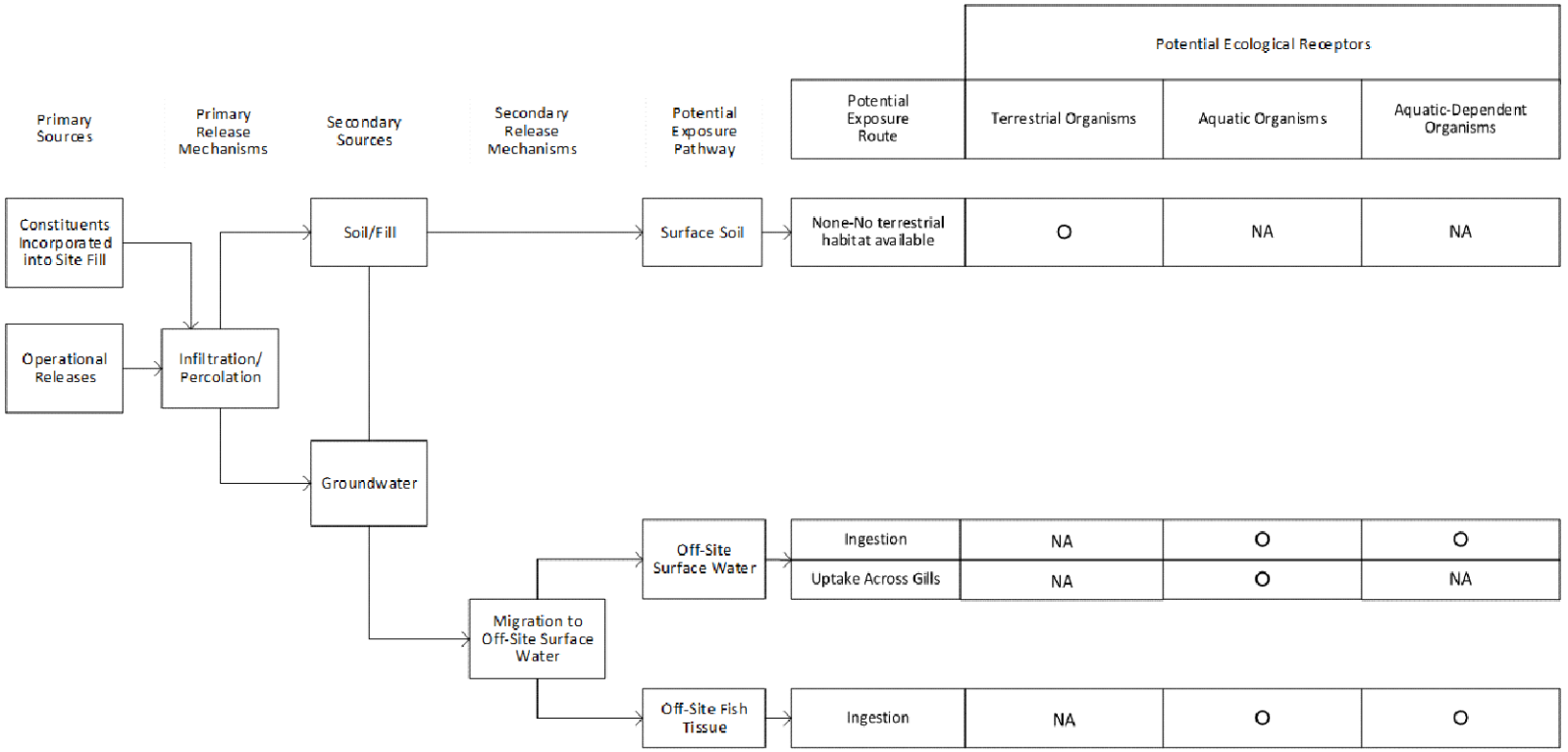
ARCELORMITTAL INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

HUMAN HEALTH CONCEPTUAL SITE MODEL

MAY 2018

FIGURE 3-1



Key:
O Pathway evaluated and found to be incomplete; no further evaluation recommended.
NA Not Applicable – Receptor not assumed to be potentially exposed via this pathway.

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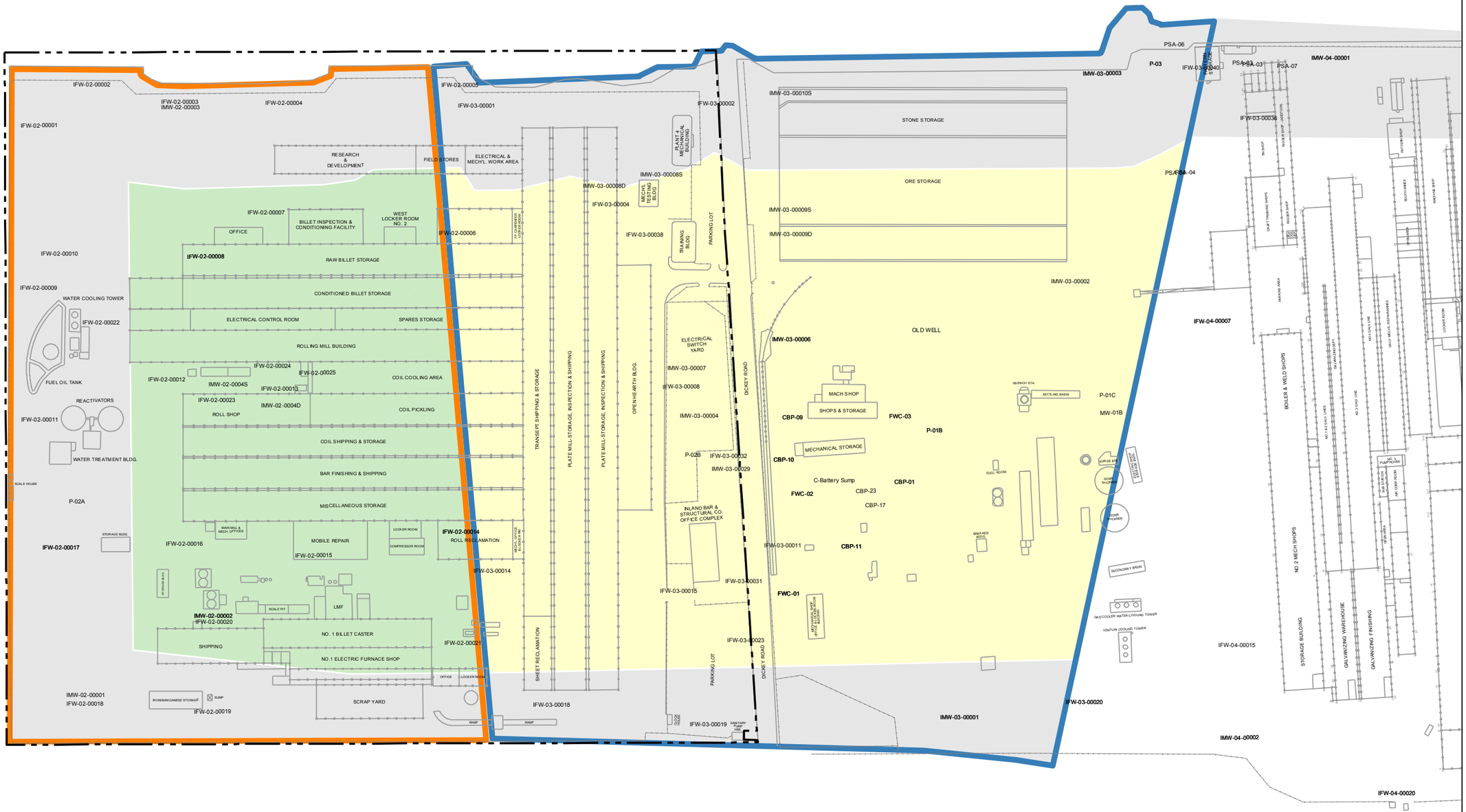
ARCELORMITTAL INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

ECOLOGICAL CONCEPTUAL SITE MODEL

MAY 2018

FIGURE 3-2

GIS FILE PATH: \\haleyaldrich.com\share\cle_common\Projects\129719 - ArcelorMittal, Indiana Harbor RCRA CA\GlobalGIS\Maps\2018_02\129719_001_0003_INVESTIGATION_AREAS.mxd — USER: ajospe — LAST SAVED: 3/1/2018 1:05:09 PM



LEGEND

APPROXIMATE INVESTIGATION AREAS

- SWMA 2
- SWMA 3
- FIA 6
- FPA 6
- ISA 3

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

2. PLAN BASED ON SURVEY AND BASE MAP ENTITLED "UTILITIES_BASE_IHE_2017_V2010.DWG" PROVIDED BY AECOM ON 24 AUGUST 2017.

0 300 600

SCALE IN FEET

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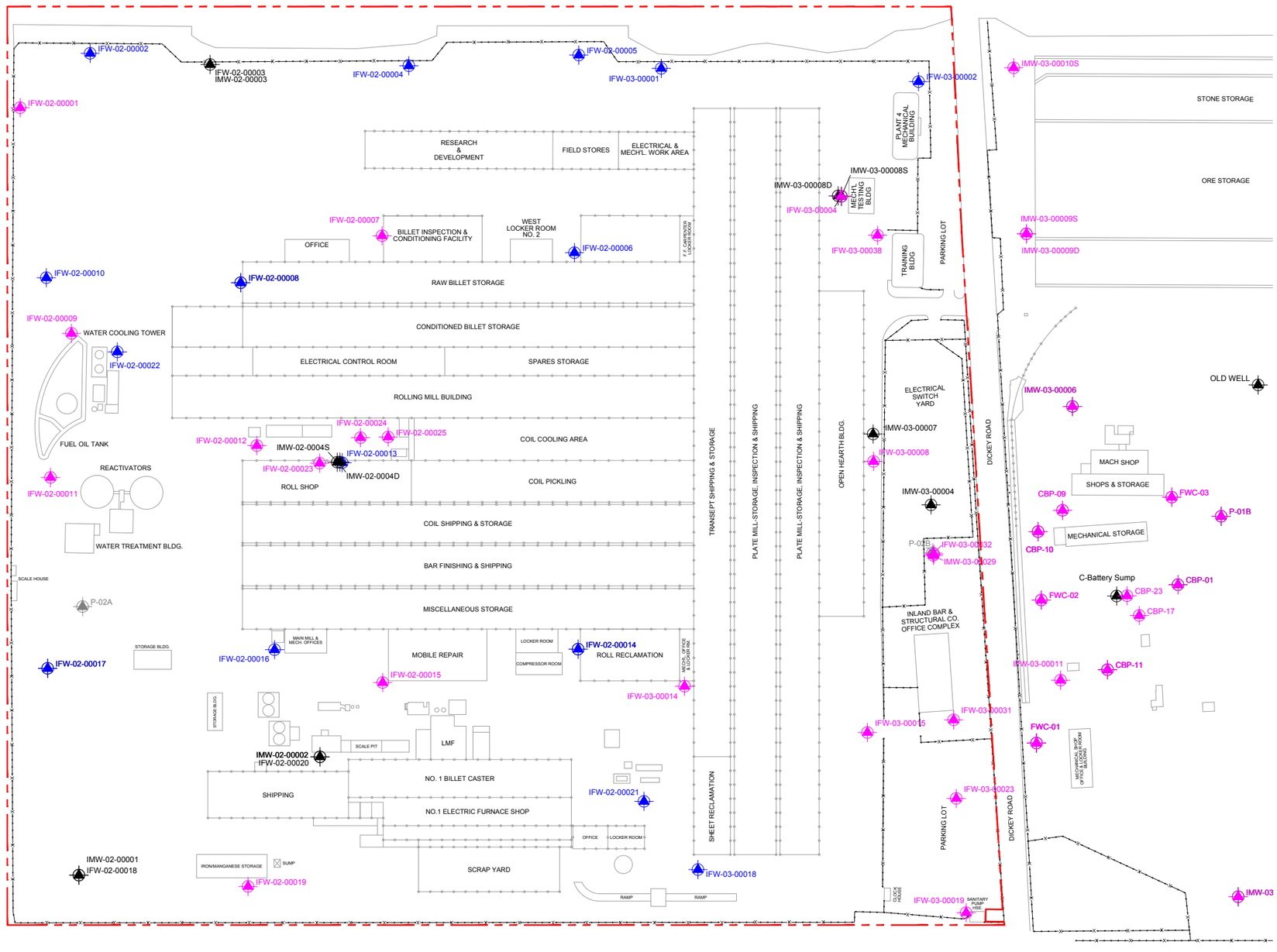
ARCELORMITTAL INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

INVESTIGATION AREAS

MAY 2018

FIGURE 4



LEGEND

- IMW-03-00010S — MONITORING WELL LOCATION
- P-02B — MONITORING WELL ABANDONED
- IFW-02-00006 — FIRST WATER SAMPLE CONVERTED TO PIEZOMETER
- IFW-03-00038 — FIRST WATER SAMPLE
- FENCE LINE
- COLUMN
- PROPERTY LINE (APPROXIMATE)

NOTES

1. PLAN BASED ON SURVEY AND BASE MAP ENTITLED "UTILITIES_BASE_IHE_2017_V2010.DWG" PROVIDED BY AECOM ON 24 AUGUST 2017.

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ARCELORMITTAL INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

SAMPLE LOCATION PLAN

SCALE: AS SHOWN
MAY 2018

FIGURE 5

O'BRIEN, JANET Printed: 3/1/2018 11:33 AM Layout: FIG 3
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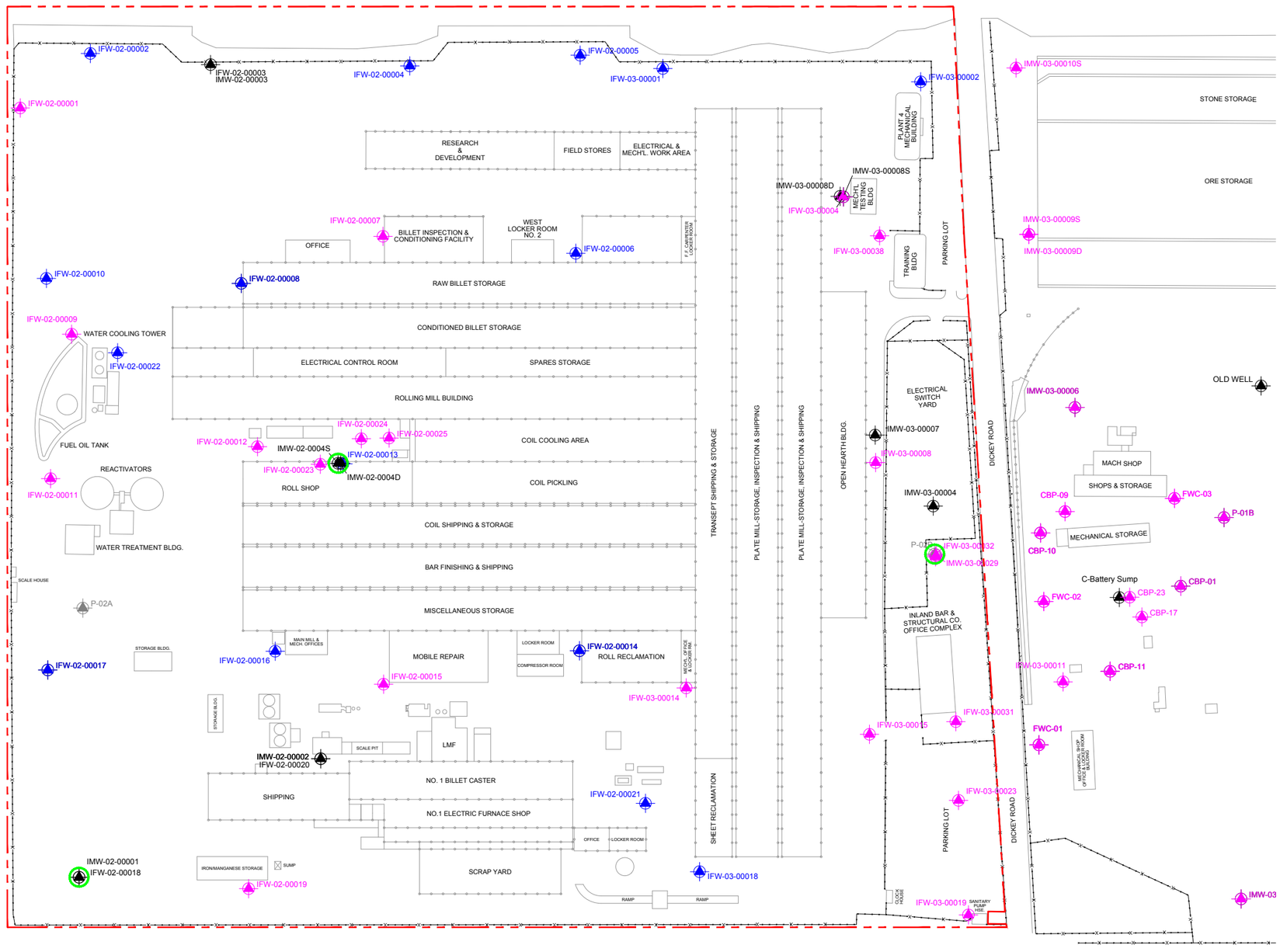

LEGEND

- IMW-03-00010S — MONITORING WELL LOCATION
- P-02B — MONITORING WELL ABANDONED
- IFW-02-00006 — FIRST WATER SAMPLE CONVERTED TO PIEZOMETER
- IFW-03-00038 — FIRST WATER SAMPLE
- EXCEEDS INDUSTRIAL/COMMERIAL EXPOSURE TO GROUNDWATER SCREENING CRITERIA
- FENCE LINE
- COLUMN
- PROPERTY LINE (APPROXIMATE)

NOTES

1. PLAN BASED ON SURVEY AND BASE MAP ENTITLED "UTILITIES_BASE_IHE_2017_V2010.DWG" PROVIDED BY AECOM ON 24 AUGUST 2017.
2. EXCEEDANCES IN GROUNDWATER BASED ON THE MOST RECENT GROUNDWATER DATA AVAILABLE FOR EACH SAMPLE AREA

HALEY ALDRICH

ARCELORMITTAL INDIANA HARBOR LONG CARBON
EAST CHICAGO, INDIANA

SUMMARY OF EXCEEDANCES IN GROUNDWATER SAMPLE LOCATION PLAN

SCALE: AS SHOWN
MAY 2018

FIGURE 6

O'BRIEN, JANET Printed: 3/1/2018 12:58 PM Layout: FIG 3
G:\129719 - ARCELORMITTAL INDIANA HARBOR RCRA CA\GLOBAL\CAD\129719_000_FIG6.DWG